2024
REPORT TO CONGRESS

of the

U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

ONE HUNDRED EIGHTEENTH CONGRESS
SECOND SESSION

NOVEMBER 2024

Printed for the use of the
U.S.-China Economic and Security Review Commission
Available online at: *www.USCC.gov*

TSMC EXHIBIT 1153
TSMC v. Marlin Semiconductor Ltd.
IPR2025-00864

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The Commission was created on October 30, 2000 by the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001, Pub. L. No. 106–398 (codified at 22 U.S.C. § 7002), as amended by: The Treasury and General Government Appropriations Act, 2002, Pub. L. No. 107–67 (Nov. 12, 2001) (regarding employment status of staff and changing annual report due date from March to June); The Consolidated Appropriations Resolution, 2003, Pub. L. No. 108–7 (Feb. 20, 2003) (regarding Commission name change, terms of Commissioners, and responsibilities of the Commission); The Science, State, Justice, Commerce, and Related Agencies Appropriations Act, 2006, Pub. L. No. 109–108 (Nov. 22, 2005) (regarding responsibilities of the Commission and applicability of FACA); The Consolidated Appropriations Act, 2008, Pub. L. No. 110–161 (Dec. 26, 2007) (regarding submission of accounting reports; printing and binding; compensation for the executive director; changing annual report due date from June to December; and travel by members of the Commission and its staff); The Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015, Pub. L. No. 113–291 (Dec. 19, 2014) (regarding responsibilities of the Commission); Pub. L. No. 117-286 (Dec. 27, 2022) (technical amendment).
The Commission's full charter and statutory mandate are available online at: *www.USCC.gov/charter.*

U.S.-China Economic and Security Review Commission

November 19, 2024

The Honorable Patty Murray
President Pro Tempore of the U.S. Senate, Washington, DC 20510
The Honorable Mike Johnson
Speaker of the U.S. House of Representatives, Washington, DC 20510

Dear Senator Murray and Speaker Johnson:

On behalf of the U.S.-China Economic and Security Review Commission, we are pleased to transmit the Commission's 2024 Annual Report to Congress. This Report responds to our mandate "to monitor, investigate, and report to Congress on the national security implications of the bilateral trade and economic relationship between the United States and the People's Republic of China." The Commission reached a broad and bipartisan consensus on the contents of this Report, with all 12 members voting unanimously to approve and submit it to Congress.

In accordance with our mandate, this Report, which is current as of October 11, 2024, includes the results and recommendations of our hearings, research, and review of the areas identified by Congress in our mandate, as defined in Public Law No. 106–398 (October 30, 2000) and amended by Public Laws No. 107–67 (November 12, 2001), No. 108–7 (February 20, 2003), 109–108 (November 22, 2005), No. 110–161 (December 26, 2007), No. 113–291 (December 19, 2014), and No. 117-286 (December 27, 2022). The Commission's charter, which includes the 11 directed research areas of our mandate, is included as Appendix I of the Report.

The Commission conducted six public hearings, taking testimony from 59 expert witnesses from government, the private sector, academia, think tanks, research institutions, and other backgrounds. For each of these hearings, the Commission produced a transcript (posted on our website at *www.USCC.gov*). This year's hearings included:

- Current and Emerging Technologies in U.S.-China Economic and National Security Competition;
- Consumer Products from China: Safety, Regulations, and Supply Chains;
- China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners;
- China and the Middle East;
- Key Economic Strategies for Leveling the U.S.-China Playing Field: Trade, Investment, and Technology; and
- China's Stockpiling and Mobilization Measures for Competition and Conflict.

The Commission received a number of briefings, both unclassified and classified, by executive branch agencies, the intelligence community, foreign government officials, and U.S. and foreign nongov-

ernmental experts on topics such as Europe's views on China, the impact of Article 23 on Hong Kong, Taiwan's priorities under the new Lai Administration, the climate for U.S. businesses in Hong Kong, China's overhead surveillance capabilities, and U.S.-China relations. The Commission includes key insights gained through these briefings either in its unclassified Annual Report or, as appropriate, in a classified annex to that Report.

The Commission conducted official fact-finding travel this year to Taiwan and Japan to hear and discuss regional perspectives on the United States' relations with China as well as trans-Pacific cooperation. In these visits, the Commission delegation met with U.S. diplomats, foreign government officials, business representatives, academics, journalists, and other experts. In Taiwan, Commissioners were received by President Lai Ching-te and discussed the importance of strong U.S.-Taiwan relations in the face of China's increasing coercive activities. The Commission also conducted official fact-finding travel to U.S. Indo-Pacific Command, U.S. Central Command, and U.S. Special Operations Command to hear their insights on the efforts our military is undertaking to counter challenges presented by China. The Commission also relied substantially on the work of our excellent professional staff (see Appendix IV) in accordance with our mandate (see Appendix I).

The Report includes 32 recommendations for congressional consideration. The Commissioners agreed that ten of these recommendations, which appear on page 27, are the most important for congressional action. The complete list of recommendations appears on page 733 at the conclusion of the Report.

We offer this Report to Congress in the hope that it will be useful in helping guide policies for the U.S.-China relationship that advance American interests and values. Thank you for the opportunity to serve. We look forward to continuing to work with Members of Congress in the upcoming year to address issues of concern in the U.S.-China relationship.

Sincerely,



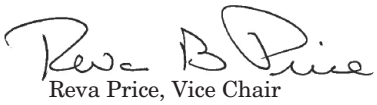
Robin Cleveland
Chairman



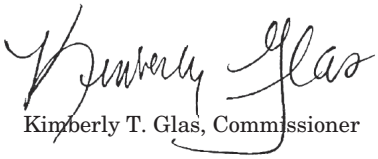
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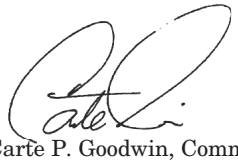
Commissioners Approving the 2024 Report


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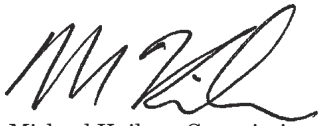

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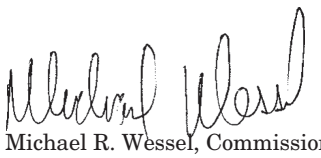

Michael Kuiken, Commissioner


Leland R. Miller, Commissioner


Randall Schriver, Commissioner


Cliff Sims, Commissioner


Jonathan N. Stivers, Commissioner


Michael R. Wessel, Commission

CONTENTS

Page

TRANSMITTAL LETTER TO THE CONGRESS iii
COMMISSIONERS APPROVING THE REPORT v
INTRODUCTION 1
EXECUTIVE SUMMARY 5
KEY RECOMMENDATIONS 27

2024 REPORT TO CONGRESS OF THE U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

Part I: The Year in Review 31

Chapter 1: U.S.-China Economic and Trade Relations (Year in Review) 31
Abstract 31
Key Findings 31
Introduction 33
China's Domestic Macroeconomic Outlook 33
U.S.-China Bilateral Commercial Relations 54
China's External Economic Relations 69

Chapter 2: U.S.-China Security and Foreign Affairs (Year in Review) 92
Abstract 92
Key Findings 92
Introduction 94
Xi Jinping Strengthens Party Control and Oversight 94
China Seeks One-Sided Adjustments in Its Relations with the United States 102
China's Foreign Policy Aims to Temper Risk and Expand Opportunities .. 109

Part II: Technology and Consumer Product Opportunities and Risks 169

Chapter 3: U.S.-China Competition in Emerging Technologies 169
Abstract 169
Key Findings 169
Recommendations 171
Introduction 173
Securing U.S. Advantage in Emerging Technologies 173
China Has Long Sought Dominance in Emerging Technologies 174
Case Studies in U.S.-China Technology Competition 179
Implications for the United States 233

Chapter 4: Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws 271
Abstract 271
Key Findings 271
Recommendations 272
Introduction 273
U.S. Consumer Product Sourcing from China 275
Challenges to Tariff Enforcement at the Border 278
Consumer Safety Enforcement inside China's Domestic Market 292
U.S. Import Regulations and Consumer Goods from China 294
Case Study: The Safety Risks and Health Hazards of Low-Quality Toys from China 308
Implications for the United States 311

Page

Part III: Competition and Conflict 333

Chapter 5: China and the Middle East 333

Abstract 333
Key Findings 333
Recommendations 335
Introduction 335
China's Diplomatic Activities in the Middle East: Wide, Varied, and Designed to Enhance Beijing's Influence 336
China's Economic, Trade, and Investment Interests in the Middle East 355
China-Middle East Technology Relations 364
China's Military and Security Presence in the Middle East 370
Implications for the United States 379

Chapter 6: Key Economic Strategies for Leveling the U.S.-China Playing Field 403

Abstract 403
Key Findings 403
Recommendations 404
Introduction 407
Economic Security as a Whole-of-Government Approach 408
Deploying Tariffs and Other Trade Measures 409
Export Controls 421
Investment Screening 431
Implications for the United States 438

Chapter 7: China's New Measures for Control, Mobilization, and Resilience 458

Abstract 458
Key Findings 458
Recommendations 460
Introduction 460
Chinese Leaders Worry about Interlocked Internal and External Risks 461
Assessing the Party-State's Activity: New Measures for Control, Mobilization, and Resilience 463
Implications for the United States 513

Chapter 8: China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies 540

Abstract 540
Key Findings 540
Recommendations 541
Introduction 542
China's Approach to Countering U.S. and Allied Military Actions in the Indo-Pacific 543
U.S.-Allied Efforts to Address Challenges from China's Military 564
Implications for the United States 585

Part IV: Taiwan and Hong Kong 611

Chapter 9: Taiwan 611

Abstract 611
Key Findings 611
Recommendations 613
Introduction 613
Cross-Strait Political Relations Remain Dismal as Taiwan Elects New DPP Government 613
China Continues to Apply Military Pressure on Taiwan, Adopts Enhanced Gray Zone Tactics 624
Taiwan Advances Unofficial Ties while Beijing Works to Build Support for Its Territorial Claim 642
Taiwan Seeks to Diversify Trade 647
Implications for the United States 657

Chapter 10: Hong Kong 686

Abstract 686
Key Findings 686
Recommendations 687

Page

Introduction 688
Hong Kong's Safeguarding National Security Ordinance (Article 23 Ordinance) 689
Hong Kong's Political and Judicial Systems Subjugated by Authoritarian Overreach 692
Draconian Laws Threaten Civil Liberties 695
Economics and Trade 701
Implications for the United States 715

Comprehensive List of the Commission's Recommendations 733

Additional Views of Commissioners 742

Appendices:

Appendix I: Charter 743
Appendix II: Background of Commissioners 751
Appendix III: Public Hearings of the Commission in 2024 761
Appendix IIIA: List of Witnesses Testifying before the Commission in 2024 .. 765
Appendix IV: List of Research Material 769
Appendix V: Conflict of Interest and Lobbying Disclosure Reporting 771
Appendix VI: Acronyms and Abbreviations 773

2024 Commission Staff and Acknowledgements 781

INTRODUCTION

In 2024, under the leadership of General Secretary Xi Jinping, the Chinese Communist Party (CCP) continued to pursue a technology-focused strategy to drive rapid military modernization, expand internal political surveillance and suppression of dissent, and assert China's political and economic agenda in the international arena. At the same time, amid a domestic property market collapse, weak consumer demand, and rising debt and employment challenges, the Party leadership has aggressively continued to advance its economic, political, and security goals through non-market practices. Xi clearly has calculated that these approaches are not only paramount in defining his leadership and claiming China's global role, but are also essential to addressing its endemic economic weaknesses and further tightening the Party's grip on the economy and society. The centralized top-down approach is reminiscent of Mao-era authoritarianism. With few remaining avenues for dissent and a political system that demands absolute loyalty to the individual leader, it has become unlikely that anyone could dissuade Xi should he decide to take actions that risk igniting a catastrophic conflict.

The CCP's efforts to consolidate economic control are evident in numerous ways: its systematic restriction of access to national financial and economic data as well as basic corporate data necessary for due diligence and safety controls, security threats to foreigners engaged in business in China, persistent pressure on foreign government partners to conduct trade in renminbi, and the concentration of resources and support for state-owned enterprises (SOEs). Although Xi has consistently emphasized the importance of small and medium-sized enterprises in providing jobs and accelerating innovation, the data show that the CCP's post-COVID policies have strengthened the position of SOEs. From June 2021 to June 2024, of the top 100 firms listed on Chinese exchanges, SOEs' share of aggregate market capitalization grew to 54 percent, rising from $2.7 trillion to $3.2 trillion. Over the same period, non-public enterprises' share of market capitalization dropped to 33 percent and aggregate revenue stagnated. While the increased flow of resources into SOEs may serve the Party's short-term interests, other challenges remain. In the past two years, Chinese universities have graduated record levels of students who are finding the market offers jobs they do not want or needs skills they do not have.

Ignoring the advice of many of his own economists and financial leaders, Xi has taken limited steps to open markets and boost consumer spending and confidence. Instead, China is reinforcing its longstanding, market-distorting approach of massive subsidies to targeted industries, this time focusing on high-tech manufacturing in order to unleash "new quality productive forces" and generate more earnings through its exports and traditional dumping ap-

proaches. Designed to strengthen self-sufficiency and achieve global dominance in key sectors—including but not limited to advanced and legacy semiconductor chips, aviation, advanced batteries, robotics, and artificial intelligence—China's strategy is also intended to integrate it more deeply into global supply chains and continue to increase every other country's dependence on it for a wide array of goods and materials. As the United States and its partners move to further curb access to military and dual-use technologies and address China's blatant disregard for global norms and international agreements, China is shifting production overseas to circumvent restrictions while expanding its own access to critical minerals, markets, key enabling technologies and tools, and labor. Because its subsidized goods undercut foreign competitors, China's approach comes at the expense of both advanced and emerging economies.

In 2024, the United States, Canada, and the EU have increased efforts to review both incoming and outgoing investment flows, strengthen trade investigation and enforcement actions, and apply export controls and sanctions. The intensification of recent efforts reflects rising concern with Chinese predatory and debt-trap practices and control of resources essential to our defense capabilities, along with expansion of China's dominance in multiple market sectors. Countries in Asia, Africa, and Latin America have also launched trade remedy investigations and imposed new tariffs on Chinese imports. Nevertheless, these responses have been largely uncoordinated as individual countries and international institutions struggle to address the scale of China's economy, its integration into global supply chains, and its defiance of WTO and other international agreements and norms.

China has sought to strengthen its international position through bilateral coercion to secure economic, trade, and security agreements with select countries and by manipulating international and regional institutions to win collective support of China's policy positions. Of importance is China's aggressive and coercive effort to convince other countries to adopt statements endorsing its positions on Taiwan, Tibet, Xinjiang, and more. At the recent triennial Forum on China-Africa Cooperation, representatives of 53 of the 55 African members adopted a declaration pledging to support "all efforts" by China to "reunify" with Taiwan. According to the Chinese Loans to Africa database released by the Boston University Global Development Policy Center, at least 49 of the 53 signatories have received loan commitments from China or Chinese lenders.

China's quest for "multipolarization" aims to create a world in which the United States and its democratic allies are weakened and constrained, while states such as China, Russia, Iran, and North Korea have free rein to threaten their neighbors and defy any notion of universally agreed-upon norms or a rules-based international order. In 2024, NATO issued its strongest criticism of China to date, labeling it a "decisive enabler" of Russia's war in Ukraine. China continues to provide substantial support for Russia's war of aggression against Ukraine by exporting vital dual-use goods that power Russia's military while shielding Russia's economy from international sanctions. Similarly, with respect to Iran, China's oil purchases

equate to about 90 percent of that country's government budget, enabling Tehran to finance terrorist groups and other regional proxies.

In the Indo-Pacific, China's aggressive actions have expanded. In addition to launching its first intercontinental ballistic missile test into the South Pacific in more than 40 years, China has engaged in large-scale military exercises around Taiwan that for the first time involved the China Coast Guard. It has pursued violent actions in contravention of international law against Philippine vessels in an attempt to block the resupply to Second Thomas Shoal in the Philippines' exclusive economic zone. It has also increased the tempo of incursions, the weapons onboard, and the number of ships entering waters around the Japanese-administered Senkaku Islands in the East China Sea. These actions are part of a troubling and persistent trend of escalation of pressure with the goal of asserting China's claim of authority and control across the region. China's approach has strengthened U.S. efforts to enhance security cooperation and base access arrangements with allies and partners in the region.

As China continues to pursue its goal of displacing the United States as the leading global power, Xi's consolidation of personal authority has increased the risk of miscalculation and conflict. Xi has attempted to compensate for China's poor economic performance by further strengthening his grip over the Party and the Party's grip over government, the military, and society. Xi continued to purge high-level officials from the national security establishment and imposed stricter disciplinary measures on rank-and-file Party members. In Hong Kong, through the imposition of a new national security ordinance, China has further quashed the city's once vibrant civil society and increased the Mainland's control.

Looking forward to 2025, even as China's economy falters, the CCP will continue to pursue its geopolitical ambitions, strengthen the Party-state, attempt to "sanctions proof" its financial position, and reduce Western leverage in the event of a conflict. A clearly coordinated, U.S.-led effort to build a coalition of like-minded countries and more closely align trade and investment policies is an essential step in responding to China's ambitions. The United States will need to strengthen work with allies and partners to build consensus domestically and internationally on the full range of policies needed to defend our shared interests and values from the threat posed by China and its partners as they seek to increase their power, extend their reach, and reshape global norms to reflect the interests of their authoritarian regimes.

EXECUTIVE SUMMARY

Part I: The Year in Review

Chapter 1: U.S.-China Economic and Trade Relations (Year in Review)

China's economy grew in 2024, albeit at a much slower pace than it did pre-pandemic. Chinese officials have introduced stimulus measures throughout the year, including a series of announcements in September and October that will likely provide a short-term boost to economic growth. While the latest stimulus round has the potential to be among the largest China has passed to deal with the current crisis, the measures are insufficient in scale compared to the scope of China's economic challenges, and their long-term impact is questionable. The fallout from the property sector collapse continues to be China's largest domestic economic headwind and a source of weakness for local government finances and consumer spending. Officials remain focused on mitigating systemic economic risks and achieving a controlled deflation of the property bubble rather than reversing the sector's decline. Although Chinese policymakers have repeatedly stated their intention to increase the contributions of services and consumption to economic growth, in reality, China has doubled down on a variant of its traditional manufacturing and export model. China has increased government subsidies and targeted supply-side stimulus toward favored industries, especially those involving advanced technology. The Chinese Communist Party's (CCP's) prioritization of supply-side policies aims to further strengthen China's manufacturing base and increase its self-sufficiency while simultaneously increasing Party-state control over domestic capital allocation and global supply chains and increasing dependency by other nations. While this strategy has led to China's emergence as a leader in the manufacture and export of goods such as solar panels and electric vehicles (EVs), China's export of excess capacity is leading to increasingly aggressive pushback from China's major trading partners and the imposition of tariffs by the United States, the EU, and others. Meanwhile, uncertainty over China's economy and heightened geopolitical tensions have weighed on investment in China. A shift in U.S. imports toward Mexico, Vietnam, and other economies suggests that a broader diversification of trade away from China may be emerging. Due to the deliberate restructuring of supply chains to avoid U.S. tariffs, many imports from third countries still contain parts and materials that originate in China.

China intensified its economic statecraft with the rest of the world as it seeks to promote its alternative frameworks for economic development and cooperation. In defiance of the U.S.-led sanctions regime, China continues to offer material support to Russia, acting

opportunistically to win energy concessions and promote alternative payment systems. Meanwhile, China has retooled its flagship Belt and Road Initiative to limit its exposure to default risks. It is again increasing lending throughout the developing world, though this time mainly in the form of emergency rescue loans to bail out indebted countries rather than fund new infrastructure projects. As advanced economies implement tariffs, China is shifting exports of manufactured goods to emerging economies, enlarging its bilateral trade surpluses across the developing world. Concerned about the impact of rising Chinese imports on their own prospects for development, some emerging economies have launched trade investigations or imposed tariffs to protect domestic industries.

Key Findings

- Chinese authorities have reasserted and expanded control over the economy centrally, regionally, and locally. General Secretary of the CCP Xi Jinping's vision for future economic growth in China is politically driven and differs from Western economic orthodoxy.
- The continuing slowdown in economic expansion has led to greater reliance on specific growth drivers, allocating capital to those targeted sectors and exporting excess capacity to sustain growth.
- China continues to rely on manufacturing and exports to drive growth while also trying to move up the value chain to produce and export high-technology goods. This growth strategy assumes the rest of the world will continue to absorb China's excess capacity at the expense of their own domestic manufacturing and technology sectors.
- China has pivoted from an emphasis on aggregate gross domestic product growth to a strategy that targets "higher quality" production in emerging technologies. China hopes that becoming a dominant producer of high-tech goods will allow it to sidestep systemic economic problems and enhance its overall global economic position and national power.
- Substantial risks remain in the property sector, which have already had serious ramifications for the Chinese economy. The CCP introduced new support measures for the property sector in 2024 and helped local government financing vehicles refinance maturing debt. However, the scale of unfinished housing and the large amount of local and regional government debt far exceeds the amount of capital allocated for financial support. These issues may weigh down economic performance in the near future as households await delivery of apartments for which they have made substantial down payments and developer bond defaults reverberate through the financial sector.
- While Chinese data measuring youth unemployment have shown recent improvement, China's college-educated youth are growing more pessimistic about their personal financial situation as they continue to enter a workforce that prioritizes manufacturing jobs they do not want and focuses on skills they

do not have. A combination of slowing growth post-pandemic and targeted policy crackdowns have weakened some consumer technologies and other service sectors that previously employed a large majority of youths. To the extent that the CCP's societal legitimacy is based on delivering economic growth and opportunity, the increase in youth unemployment has called that into question.

- The CCP has directed state-owned banks and asset managers to intervene to prop up the stock market and issue credit to state-owned enterprises (SOEs) and regional and local governments on favorable terms. As long as these measures remain a common practice, Chinese households will remain skeptical of passive long-term domestic investment opportunities as a way to generate wealth, forcing them to save a larger share of their income. Uncertainty regarding Chinese investment opportunities dampens China's attempts to bolster consumption.

Chapter 2: U.S.-China Security and Foreign Affairs (Year in Review)

In 2024, China sought to mitigate internal and external risks by exercising a combination of coercive and persuasive strategies abroad and continuing to tighten political control at home. Internationally, China attempted to promote itself as the world leader best positioned to solve and prevent conflicts, represent low- and middle-income countries, and promote economic growth while also making it clear that it opposed U.S. policies and alliance relationships. In its diplomacy with the United States, China sought to use the promise of bilateral dialogues on narrow areas of common interest to derail what it perceives as the United States' policy of strategic competition. It also aimed to tighten ties with Europe and encourage divisions within the transatlantic alliance but continued to undermine its own credibility through its intensifying economic, military, diplomatic, and political support for Russia. At the same time, China is increasingly providing support and resources to countries involved in military operations against Western allies. China has turned a blind eye as Iran and North Korea act in ways that undermine global stability, and it has demonstrated willingness to exploit tensions in the Middle East for geopolitical gain. Overall, China reacted to other countries' efforts to protect their economic and physical security by portraying them as hostile, exclusionary, and destabilizing. In the case of the South China Sea, China resorted to more dangerous, violent actions. China also expanded its campaign to persuade Pacific Island states to adopt Beijing's preferred policies on a range of issues and intensified its longstanding diplomatic efforts in Africa, Latin America, and the Caribbean. Despite the willingness of some governments to deepen cooperation with Beijing in various domains, many other countries remained deeply skeptical of China's intentions and proposals.

Domestically, the year saw a further consolidation of the CCP's control over the state bureaucracy and a continued concentration of power within the Party into the hands of General Secretary Xi. To combat persistent problems of corruption and fears of political disloyalty, Xi and a small circle of top leaders tightened their grip

on the Party rank and file while continuing to unseat and in some cases disappear high-ranking figures across the government and military. Meanwhile, the CCP increased emphasis on "political discipline" across Party ranks and introduced new Party loyalty tests, including potential removal from internal Party positions for simple acts like "privately reading, browsing, and listening to newspapers, books, audio-visual products, electronic reading materials, and online materials with serious political problems." In 2024, the People's Liberation Army (PLA) also announced a major reorganization that elevated the importance of space, cyber, and information capabilities and created three new forces under the more direct control of the top military leadership, led by Xi.

Key Findings

- As part of its efforts to solidify its control across the Party, state, and military, in 2024 the CCP leadership introduced new measures on political discipline and anticorruption, targeting everyone from low-ranking Party members to senior military officers. From the top of the system, Xi delivered dire messages to Party and military audiences on the severity of remaining problems, revived some Maoist concepts and slogans, and emphasized the importance of political loyalty and enduring hardship. China's leaders viewed enhanced domestic control as a key factor in China's ability to accomplish its domestic and international objectives.
- China continues to assert that the United States poses intensifying strategic risk. Despite a bilateral agreement reached in late 2023 to pursue limited cooperation on military communication, climate change, countering fentanyl and other drugs, artificial intelligence (AI), and people-to-people ties, China has continued its efforts to counter or weaken U.S. policies without changing its own behavior. Fundamental divergences on issues such as Taiwan and access to markets, capital, and technology remain.
- In 2024, China accelerated efforts to build international support from as many countries as possible—with a focus on the developing nations of what it calls the "Global South"—for China's claims to global leadership, its continuing efforts to isolate and subjugate Taiwan, and its desired forms of economic cooperation. At the same time, Beijing sought to portray actions taken by the United States and many of its allies and partners to protect their own interests and established global norms as undermining the prospects for peace, stability, and prosperity and the future of collective international progress led by China. (For information on China's activities in the Middle East in 2024, see Chapter 5, "China and the Middle East.")
- China and Russia committed to further deepening their joint efforts against the United States. China has sustained its economic, diplomatic, political, and material support for Russia's war effort in Ukraine. China also provided satellite imagery and dual-use materials that Russia is using for the reconstitution of its defense industry—such as weapons components, machine

tools, and microelectronics—all while claiming to play a leading role in advancing a political solution to the conflict. In exchange for such support, Moscow has reportedly provided submarine, aeronautic, and missile technologies to Beijing as defense cooperation between the two countries continues to strengthen.

- China sought to counteract a deteriorating strategic relationship in Europe, using mainly positive rhetoric and promises of deepened cooperation to persuade the EU and individual European countries to distance themselves from the United States and abandon their efforts to de-risk relations with China. Xi tried to reframe Europe's economic dependencies on China as the byproducts of a beneficial symbiosis, to downplay political differences, and to emphasize supposed shared interests in the creation of a more equal international system.
- China's destabilizing behavior in the Indo-Pacific region continued. China's naval and coast guard presence around the Japanese-administered Senkaku Islands and flights near Japanese airspace in the East China Sea represented a significant escalation from previous activity. In the South China Sea, China's aggressive behavior escalated to new levels in 2024 as the China Coast Guard (CCG) took increasingly aggressive, unsafe, and even violent measures to attempt to block the Philippines, a U.S. treaty ally, from exercising its lawful rights in its exclusive economic zone (EEZ). China's officials continued to leverage lawfare tactics to attempt to normalize their efforts to impose their will upon other countries in the region through coercive and illegal actions, superior force, and numbers.

Part II: Technology and Consumer Product Opportunities and Risks

Chapter 3: U.S.-China Competition in Emerging Technologies

The United States is locked in a long-term strategic competition with China to shape the rapidly evolving global technological landscape. Innovation in emerging technologies could transform society, create new industries, foster new dependencies, and alter the character of warfare. Whichever country secures a lead in key technologies—particularly those with first mover advantages—will tip the balance of power in its favor and reap economic benefits far into the 21st century. China under General Secretary Xi has recognized the potential advantages of seizing the innovation "high ground" in this competition and has aggressively designed, implemented, and funded programs to dominate technologies of the future. In doing so, Beijing hopes its efforts will underpin national rejuvenation, making the country powerful, self-sufficient, and impervious to perceived technological "containment" from the United States and its allies and partners.

China has focused on developing emerging technologies such as AI, quantum information science (QIS), biotechnology, and battery energy storage systems. The race for superior AI across industries relies on successfully bringing together enabling technologies and building blocks, including advanced chips, computing power, well-designed al-

gorithmic models, and rich datasets for model training. While the United States has a lead in most of these AI-related categories, China is making rapid advancements and has demonstrated some ability to innovate around U.S. and allied export controls. QIS is still in its infancy, yet it may eventually spawn paradigm-shifting breakthroughs enabling computation and remote sensing at a speed and scale heretofore impossible. Quantum breakthroughs could provide technology capable of easily breaking existing encryption, ensuring secure communications, solving complex computations rapidly and at scale, and accelerated processing of military data to provide a decisive edge on the battlefield. China is regarded by some experts as leading in the subfield of quantum communications, while the United States maintains a lead in quantum computing and quantum sensing. In the field of biotechnology, China is quickly closing the innovation gap with the United States in novel biopharmaceutical, genomic, and new material applications. Moreover, Chinese biopharma companies have expanded their footprint internationally and become integral in U.S. drug development and bio-manufacturing supply chains. Finally, due in large part to substantial and sustained subsidies, Chinese companies have established a global lead in battery energy storage systems. China has consolidated control over much of the battery supply chain, from upstream mining and processing of critical minerals to mid- and downstream production of battery components and end products such as batteries for EVs.

China's rapid progress in establishing itself as a leader in these emerging and foundational technology fields raises a host of economic and national security concerns for the United States, from questions of dependence and economic leverage to potential threats to U.S. military superiority. The United States has realized the importance of technology competition with China and has significantly altered the policy environment around key technologies, particularly semiconductors, advanced computing, and clean energy. China faces many challenges, including these U.S. policies, a faltering domestic economy, and inefficiencies inherent in its state-directed innovation system. However, despite these challenges, China's rapid technological progress threatens U.S. economic and military leadership and may erode deterrence and stability in the Pacific as well as tip the global balance of power.

Key Findings

- The CCP is prioritizing research in key emerging technology areas such as AI, quantum technology, biotechnology, and batteries with the goal of becoming a world leader in science and technology. Xi is placing a bet that China's investments in high-tech industries will unleash "new quality productive forces," transcend an old growth model reliant on infrastructure and lower-technology exports, and help China achieve its goal of becoming a superpower in the 21st century. China's focus on emerging technologies is also motivated by its desire to attain self-sufficiency in what its leaders describe as "chokepoint" technologies amid an international environment they perceive as increasingly hostile and to better prepare for a potential conflict with the United States over Taiwan or in other contingencies.

- China's state-centric approach and heavy investments in domestic innovation reflect similar techno-nationalist initiatives dating back to the Mao Zedong era. Under Xi, these efforts have intensified as the Party has sought to impose tighter top-down control in the innovation ecosystem to make breaking dependencies on foreign technologies a focal point.
- The United States and China are neck-and-neck, with one being ahead or behind depending on the specific critical and emerging technology. On certain manufacturing-intensive technologies, like advanced batteries and EVs, China's various efforts have enabled its companies to obtain a clear advantage.
- ***Artificial intelligence:*** China is making rapid advancements and noteworthy investments in its AI capabilities. It is developing AI not only to advance China's economic growth more broadly but also for military applications, such as autonomous unmanned systems, data processing, decision-making, and cognitive warfare. Across key aspects of AI competition, however, China is having mixed success.
  - ***Advanced semiconductors:*** The United States and like-minded countries currently have an advantage in the advanced semiconductors needed to power AI technologies. China is aggressively working to address this deficit.
  - ***Compute and cloud:*** The United States leads in total compute and cloud, but several Chinese companies have notable cloud capabilities. Further, the nature of cloud computing creates a heightened threat of "leakage" into China of advanced compute capabilities located outside of China.
  - ***AI models:*** The United States currently leads the world in developing robust AI models, but China is pursuing numerous government-led and ostensibly private efforts to develop advanced AI models.
  - ***Data:*** Data are critical to AI capabilities. Each country has certain advantages in terms of collection, use, and availability of data for AI systems. China understands the value of data to AI and has taken active measures to increase the availability of quality data within its AI ecosystem.
- ***Quantum technologies:*** Both the United States and China are heavily funding research in quantum computing, sensing, and communications, the three subdomains that together make up QIS. While QIS is still in an early stage of development, it will have significant competitive and military impacts if it becomes commercially viable. China's Party-state drives quantum research through support to a major state laboratory in Anhui Province as well as a growing roster of state-backed startup companies. China appears to be an early leader in quantum communications, launching the world's first quantum communications satellite and connecting two ground stations with quantum key distribution. In other areas, China appears to be lagging behind the United States, though its scientists have claimed breakthroughs in cracking encrypted communications

systems and developing advanced radar technology, claims that are difficult to confirm.

- ***Biotechnology:*** Biotechnology is another key emerging technology with the potential for transforming many industries. China aims to use biotechnologies to make itself less dependent on U.S. agriculture while embedding Chinese firms in U.S. food production and supply chains in genomic, pharmaceutical, and other biotechnologies. The major research and market presence of Chinese genomic and biotech services companies in the United States gives these companies access to key technologies and data.
- ***Advanced batteries:*** China has attained a sizable advantage at each stage of the battery supply chain, ushering in rapid global market share increases for Chinese EV and battery makers. China's near monopoly on battery manufacturing creates dependencies for U.S. auto manufacturers reliant on upstream suppliers as well as potential latent threats to U.S. critical infrastructure from the ongoing installation of Chinese-made battery energy storage systems throughout U.S. electrical grids and backup systems for industrial users.

Chapter 4: Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws

The rapid escalation of e-commerce sales impedes U.S. efforts to ensure the safety and regulatory compliance of consumer products flooding the market from China. These new channels, combined with China's reinvigorated focus on export manufacturing as a pillar of economic growth, mean that Chinese factories will remain major suppliers across the consumer products space. Though the quality of goods sourced from China has improved somewhat over the past two decades as a result of increased due diligence and monitoring on the factory floor, significant exceptions remain, and overall product quality and safety still fall short of U.S. standards. Many Chinese companies that disregard manufacturing best practices utilize cross-border e-commerce channels to send products directly to consumers under a de minimis exemption that provides duty-free entry for small parcel shipments. A continually rising flood of small parcels at U.S. ports of entry compounds the difficulty of detecting potentially risky products before they reach households and children. Holding Chinese manufacturers and exporters accountable remains challenging—if not virtually impossible—under the Xi regime. Efforts by oversight agencies, including the U.S. Consumer Product Safety Commission, to protect U.S. consumers have been hampered by falsification of safety documents, the rise of small parcel shipments, and lack of responsiveness from many Chinese exporters. In the event that a Chinese made product causes injury or hazard, U.S. regulatory agencies have no authority to unilaterally order an immediate recall of the item, and often have limited other options to protect consumers.

Accurate data on consumer product imports are crucial to enforcement, but an increased number of Chinese exporters are seeking to exploit loopholes in U.S. law and disguise the nature and/or origins

of their imports to dodge higher tariffs on products from China. Duty-free entry under de minimis provides a means for some Chinese manufacturers to avoid China-specific tariffs. Unscrupulous Chinese entities also take advantage of the import channel to funnel fentanyl-related materials into the North American market, fueling the illicit supply of synthetic opioids in the United States. Other firms employ a wide range of illegal and deceptive tactics to lower or evade U.S. import duties. Trade misinvoicing and other U.S. customs violations have grown more widespread since 2018. Trade data indicate that some countries have emerged as hubs for the transshipment of goods and duty evasion through circumvention and related strategies. It remains challenging, however, to quantify the full extent of duty evasion, and it is likely that additional illicit activity has gone undetected. These tactics create risks for the United States by obscuring an import's source country and factory, creating additional challenges to stopping unsafe Chinese products from entering the U.S. market. Moreover, China is home to the world's largest counterfeiting industry, harming not only U.S. businesses but also consumers who face increased safety risks from shoddily made imitations.

Key Findings

- China aims to continue growing its manufacturing sector, leading to further industrial overcapacity and a surge in exports. Chinese manufacturers have, in general, improved in quality and reliability over the past decade, owing in part to increased enforcement by Chinese authorities domestically and increased due diligence by foreign firms. However, the scale and dynamism of China's manufacturing sector means regulators in the United States struggle to respond to emergent product safety issues. New online platforms and the multitude of third-party e-commerce sellers and resellers compound these issues.
- U.S. regulators are overwhelmed by the volume of imports arriving from China, and they are only able to inspect a small fraction of imports, potentially leaving large numbers of unsafe or illegal goods to enter the U.S. market daily.
- Unscrupulous China-based sellers lack the diligence, capacity, and skill required to produce high-quality goods that meet U.S. safety regulations, thus increasing U.S. consumers' exposure to risks stemming from unsafe, counterfeit, and poor-quality goods from China. These deceptive tactics by Chinese producers are particularly concerning in industries such as batteries and medical products, where defective products pose potentially debilitating or deadly consequences.
- U.S. import regulators face significant challenges in monitoring the growing volume of Chinese e-commerce shipments specifically, which typically enter under a de minimis exemption that provides duty-free treatment for parcels valued under $800. The growth of smaller, China-based sellers on U.S. e-commerce sites and the rising popularity of Chinese e-commerce platforms present a novel and growing risk to U.S. consumers and the ability to enforce safety regulations and other laws. Insufficient

data, personnel, and overwhelming volume mean these shipments receive less scrutiny.

- Some Chinese companies have tried to circumvent normal U.S. customs channels in response to tariffs and other U.S. laws. Though the true scale of customs fraud is unknowable, some actors are using illegal tactics such as transshipment, circumvention, and import undervaluation to evade paying customs duties. These tactics worsen the information available to U.S. agencies, increasing the challenge of identifying hazardous imports.

Part III: Competition and Conflict

Chapter 5: China and the Middle East

The Middle East is a region of strategic importance to China due to its energy resources, location astride key trade routes, and possible receptivity to Chinese efforts to construct an alternative, illiberal world order. As China has deepened its trade and investment interests in the Middle East over the past decade, it has also built a variety of diplomatic partnerships and sought to present itself as a neutral arbiter of regional disputes while expanding its military activity in the region. In the short run, China benefits from its relationships in the Middle East focused on energy trade and securing infrastructure contracts for its SOEs. In the long term, Beijing aims to expand market share for renewable energy and high-value exports, gain supporters in its bid for global leadership, and potentially establish new outposts capable of supporting its military for increased power projection. China's involvement in the Middle East thus presents U.S. policymakers with an array of economic, normative, and geopolitical challenges.

Chinese engagement with the Middle East is selective and transactional, focused on advancing its own interests; Beijing appears to have little desire to play a significant role in advancing regional security or to meaningfully contribute to a resolution of ongoing disputes, including the recent Israel-Hamas war. Instead, China appears content for the moment to free-ride on the U.S. and allied regional security infrastructure—including most recently the defense of maritime shipping from Houthi attacks—while blaming the United States for promoting instability. China also works to undermine U.S. ties with key Middle Eastern partners while supporting adversarial countries like Iran. China takes advantage of Iran's international isolation by purchasing nearly 90 percent of its exported oil at a steep discount, generating revenue equivalent to about 90 percent of Iran's total government budget. Chinese companies are critical to the development of Iran's drone and ballistic missile programs, supplying dual-use components that are utilized in unmanned aerial vehicles used by Russia and the Houthis. Chinese strategists likely also assess that the turmoil in the Middle East deflects a portion of U.S. attention and resources away from the Indo-Pacific.

As the technology competition between the United States and China has intensified, the Middle East is emerging as a key stakeholder and potential conduit for Chinese end users to gain access to leading-edge technology. Chinese technology companies have had

market presence in the region for decades and are working to deploy telecommunications equipment and other underlying technology infrastructure across the region in both wealthy and underdeveloped countries. Emerging technologies like AI and advanced computing play a central role in the ambitious national strategies of Gulf Cooperation Council countries as they seek to diversify their economies away from reliance on fossil fuel. Countries like Saudi Arabia, the United Arab Emirates, and Qatar have dedicated massive investment to build up domestic technology industry and innovation hubs. The Middle East will be an important region for U.S.-China technology competition, both in terms of partnerships and market access and the effectiveness of technology controls by the United States, its allies, and partners.

Key Findings

- China's engagement with the Middle East has expanded during General Secretary Xi's tenure and is driven partly by deepening strategic rivalry with the United States. In contrast to the Indo-Pacific, where China clearly seeks to displace the United States and consolidate a position as the dominant power, the Middle East is a region Chinese leaders view as a source of intractable security challenges and value primarily for its resources and economic potential. While China does not have the willingness and ability to replace the United States as a major contributor to regional security, it is nonetheless eager to instrumentalize the region in its efforts to construct a new, illiberal world order at the United States' expense. China offers the region's autocratic governments a vision of a new regional security architecture under the Global Security Initiative and is deepening its diplomatic relations with U.S. partners and adversaries alike to erode Washington's influence.
- Beijing's reaction to the Israel-Hamas war has illustrated both the limits of its diplomatic influence in the Middle East and its willingness to exploit regional tensions for geopolitical gain. China has played no significant role in the U.S.- and Arab-facilitated negotiations between Israel and Hamas, having lost its credibility as a neutral actor by refusing to directly condemn the terrorist group for the October 7th attacks. It has not contributed to coalition efforts to protect maritime shipping from Houthi attacks, and in contravention of international maritime law and norms it has declined to use its naval ships deployed in the region to respond to distress signals from non-Chinese vessels. Rather, Beijing has sought to appeal to Arab states and burnish its image as the self-declared leader of what it calls the "Global South" by portraying itself as an ardent supporter of Palestinian national liberation and condemning Israel and the United States as oppressors.
- China is the largest trading partner for many countries in the region, with growth in total trade and direct investment between China and the Middle East outpacing that of China with the rest of the world over the past five years. While China benefits from infrastructure contracts and expanding market share for its exports to the region, its principle economic objective re-

mains securing steady flows of energy resources, with between 40 and 50 percent of China's total imported energy coming from the region.

- China and Iran have a similar interest in opposing the U.S.-led rules-based international order, but the relationship is to a large degree one of convenience. Just as it is using Russia's diplomatic isolation to extract favorable terms on energy deals, China is opportunistically leveraging its consumption market to purchase discounted oil from Iran while going to great lengths to avoid the appearance of sanctionable transactions through the use of smaller purchases and shell companies.
- China's military activities in the Middle East advance its economic interests while allowing the PLA to gain operational experience and lay the foundation for a more robust future military presence.
- China is emerging as a global competitor in niche sectors of the Middle Eastern arms market. China is crucial to the development of the Iranian drone industry. Although the U.S. Department of the Treasury and the Department of Commerce have placed sanctions on a number of Chinese companies, Chinese actors are crucial to supplying components that enable Iran to build drones, which it sells to Russia and to its Middle Eastern proxies such as the Houthis. China continues to either directly or indirectly provide regional actors with technologies that contravene its voluntary but nonbinding commitment to adhere to the Missile Technology Control Regime (MTCR). This includes a continued occasional and covert role in supplying Iran's ballistic missile program by Chinese SOEs and non-state actors.
- The Gulf is emerging as a new arena in U.S.-China technology competition, with concerns that close ties between sanctioned Chinese entities and technology firms in the region may be facilitating transfer of leading-edge technology subject to U.S. export controls. Countries and companies in the Gulf may be compelled to choose between technology infrastructure and partnerships with China's tech ecosystem or those with the United States and its allies. Increased deployment of Chinese-made surveillance technology is also a point of concern given its potential to enhance suppression tactics commonly used by authoritarian governments.

Chapter 6: Key Economic Strategies for Leveling the U.S.-China Playing Field

Many of China's economic, technological, and military policies are at the expense of and contrary to U.S. and allied interests. U.S. officials have long been aware that China's non-market economic practices advantaged Chinese companies at the expense of U.S. firms and workers and resulted in significant shifts in supply chains. However, for many years, optimism that a complex and interdependent global economy would deter conflict and help liberalize China tempered the U.S. response, keeping the focus on more narrow industry-specific issues or better enforcement of existing trade rules. Similarly, despite periodic concerns that technology transfers might be assist-

ing the PLA's military modernization drive, until very recently this was viewed as an issue for narrow export controls on weapons and dual-use products, not a reason to broadly challenge China's innovation ecosystem or limit flows of U.S. capital and know-how that help build up China's technological capabilities. Today, China continues to flood global markets with exports in an attempt to boost its domestic economic growth while simultaneously pursuing the development of emerging technologies to assert its global geopolitical interests and spur military modernization. In response, the United States' economic approach toward China is evolving to combat China's state-led, non-market practices. The United States' toolkit for addressing these challenges includes trade policy tools, such as tariffs on imports from China, controls on the transfer of technology, and restrictions on inbound and outbound investment that might advance China's development of sensitive technologies.

At the same time, there remains a lack of consensus on the scope and implementation of these measures. Lacking an overarching set of objectives and a comprehensive strategy for achieving them, some policies are implemented at cross-purposes, weakening the United States' approach to economic competition with China. For example, while the United States has tightened controls on key dual-use technologies like semiconductors, it only recently began considering restrictions on U.S. outbound investment into those same sectors in China. Simultaneously, U.S. export controls have pushed Chinese chip makers to focus their additional efforts on legacy chip production. However, legacy chips are also critical to U.S. commercial and military supply chains. Policies that allow China's non-market practices to lead to dominance of the sector are thus incongruent with U.S. strategic goals. Unlike the National Security Strategy, the United States does not yet have a unified strategy organizing its approach to economic security. The effectiveness of the United States' economic security strategy faces further limits at present from a lack of data and analytic capabilities as well as a lack of adequate alignment of policies with key allies and partners.

Key Findings

- U.S. trade policy is a key tool for defending against China's non-market economic practices, diversifying U.S. supply chains, and preserving U.S. economic security.
- Efforts to de-risk supply chains are undermined by a lack of a cohesive trade policy as well as the continued presence of Chinese value-added content in non-Chinese imports.
- As China increasingly asserts itself as a significant military power, export controls have emerged as a central tool in U.S. efforts to deny China direct access to critical dual-use goods and advancements in national security-sensitive technologies. However, a number of operational challenges diminish their effectiveness, including lack of coordination among key allies, compliance challenges, and uneven enforcement.
- While Congress in 2018 strengthened the U.S. inbound investment screening mechanism, it considered but did not implement matching rules on outbound investments. In the last few years,

policymakers have actively explored creating an outbound investment screening mechanism. Such a mechanism would curb important U.S. economic support to China's advanced technology ambitions, such as the transfer of management expertise, know-how, and capital that is unaddressed by the United States' existing toolkit, including a yet-to-be-implemented executive order.

- A lack of adequate detailed data on U.S. trade and investment flows poses an acute challenge to effective policy scoping and implementation.
- Economic partners in the G7 and other developed markets have implemented trade measures to address trade distortions caused by China's state-led economy; these measures continue to evolve. They are also exploring parallel export controls and outbound investment screening policies to limit the flow of key technologies. At times, the United States has had difficulty obtaining alignment with allies, which can undercut the effectiveness of U.S. policy and put U.S. companies at a disadvantage.

Chapter 7: China's New Measures for Control, Mobilization, and Resilience

After a long period of "peace and development" during which CCP leaders felt the international environment was conducive to China's economic development, growing power, and international influence, the views of China's leadership have changed. General Secretary Xi now believes China has entered a period of increased challenges both domestically and internationally and has taken a number of steps to better prepare the Party and country for this period of threat and uncertainty. On the political front, Chinese leaders have broadened conceptions of national security to enhance the Party-state's power, build out the national security state, and expand tools of societal control at the grassroots level. An empowered security apparatus is warning Chinese citizens to be hypervigilant about interactions with foreigners. Many of these efforts have echoes of Maoist-era methods of mass mobilization. On the military front, China's armed forces have improved their mechanisms for mobilizing available manpower, leveraging resources in the civilian economy, and priming the Chinese public to contribute to national defense. One such program is the establishment of "new type" militias within enterprises made up of civilians with skills in high-tech sectors such as robotics, AI, and unmanned systems. On the economic front, China has implemented measures to strengthen food and energy security by building stockpiles of key grains and oil and redirecting supply chains toward trusted partners. In addition to pursuing the internationalization of its currency, the renminbi (RMB), China is also working to promote an alternative payments infrastructure as a possible mechanism to bypass future U.S. financial sanctions.

China's numerous and varied actions are driven by multiple goals, including the desire to suppress domestic challenges, prepare for a more volatile and less open international economic environment, and position itself effectively for long-term strategic competition with the United States. At the same time, many of these actions serve to increase China's capacity for rapid military mobilization

and resilience in the case of hostilities. Recent changes have made China significantly more prepared for war compared to five years ago while potentially obscuring the signals that would normally precede an imminent or near-term mobilization. These changes have already altered the strategic and operational environment in China's favor by challenging outside observers' ability to monitor traditional warnings and indicators and reducing timelines for the United States to make decisions in response to China's actions. Chinese officials likely also believe they have moderated the economic costs the United States and its allies could impose on them through sanctions, blockades, and trade restrictions in the event there is an outbreak of hostilities, potentially reducing the deterrent effect of non-military policy options and external constraints.

Key Findings

- China's leaders believe they have entered a new historical phase characterized by greater internal and external threats. This heightened threat perception has fueled numerous policy efforts to better prepare the Party, China's society, and the military for what the Party believes will be a more hostile and uncertain period.
- China's leaders have intensified their rhetoric about risk over the last few years, increasingly invoking a concept called "extreme scenario thinking" that suggests Chinese policymakers are increasingly thinking through the potential ramifications of a wide range of scenarios, including the repercussions of actions they might initiate on the international stage. At the same time, CCP rhetoric toward Taiwan and the United States has not escalated to the degree that preceded China's conflicts in past decades or to what some experts expect to see if China were imminently preparing for war.
- China is continuing longstanding efforts to address concerns over food insecurity. China is largely self-sufficient in four of five key staples, though it is becoming increasingly dependent on corn and wheat imports. China relies on imports for the fifth (soybeans) and is overall a significant net food importer. China is believed to have the world's largest stockpiles of its key staples and has taken measures to diversify its soybean supplies away from the United States and reduce overall soybean consumption.
- China is taking measures to enhance its energy security and to ensure it can address its oil energy needs for long periods of time without imports. China is largely self-sufficient in coal, its primary energy source for power generation, and it has developed a coal surge capacity to deal with temporary disruptions. Perhaps because natural gas is not a major part of China's energy mix, China seems less concerned about its significant reliance on imports and only has a short-term stockpile of natural gas. China is heavily dependent on oil imports for transportation and appears to be building very large stockpiles—with estimates of one to two years' supply.

- China is taking measures to enhance its financial security, challenge global dollar dominance, and protect itself from U.S. financial sanctions by creating alternatives to dollar-based trade and the U.S.-controlled financial payments system. These efforts have accelerated since the imposition of sanctions in the wake of Russia's war of aggression against Ukraine. While the RMB is not on pace to supplant the U.S. dollar as a medium of global exchange, China is developing these tools with the intention to insulate itself from many types of U.S. financial sanctions.
- Party leaders have developed an exceedingly broad conception of national security and expanded their tools for domestic control. These include an increasingly robust internal security apparatus, the revival of some Maoist-era methods of mass mobilization, and efforts to leverage the public for surveillance and control, including by outsourcing public security tasks to government-sanctioned "vigilante groups." This heightened focus on security has been formalized through an expansion of relevant legal infrastructure, with new laws defining national security as touching upon virtually every aspect of society.
- There is currently no evidence that China is preparing for an imminent war, but the various reforms China has made to its defense mobilization system over time undeniably make it more confident and prepared for hostilities than it was five years ago. Many of these measures reduce the time needed for China to mobilize and transition from peacetime or gray zone activities to active hostilities and could be read as efforts to prepare the operational environment for a conflict over Taiwan. Given the decreasing amount of open source data available about China, the United States and international observers will have less visibility of warnings and indicators that may presage Chinese military action, a shorter timeline to react once indicators are discovered, and fewer non-military tools to respond.

Chapter 8: China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies

Over the past two decades, China has invested heavily in capabilities to counter military action by the United States and its allies in the event of a conflict in the Indo-Pacific. As a result, U.S. forces and bases in the region would face a significant threat from the PLA in any regional contingency involving treaty allies and/or security partners, and the outcome of any such conflict is far from certain. China's leadership views the U.S. military's presence, activities, and alliance commitments in the Indo-Pacific region as hostile, leading the PLA to focus significant efforts on planning and training for the possibility of U.S. military involvement in a regional conflict.

China's plan to counter U.S. military intervention requires the capacity to find U.S. forces, thwart their operations, hamper their ability to rely on satellites and other networked systems, and destroy forward-based assets as well as assets at long distances. Among the most important capabilities for these missions are the PLA's Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) networks, electronic warfare (EW) assets, and offensive missile forces. China has significantly

improved each of these capabilities over the past two decades, with an increased capability to disrupt or paralyze an adversary's C4ISR system and a large arsenal of missiles with ranges capable of posing a threat to U.S. forces. At the same time, however, the PLA continues to contend with issues sustaining and maintaining its warfighters in combat. China's government, military, and academic sources also note trends in U.S. military development with the potential to undermine China's counter-intervention capabilities, such as evolution in U.S. strike and missile defense capabilities, new operational concepts, and increased cooperation between the United States and its Indo-Pacific allies.

U.S. alliances represent a critical part of the United States' approach to pursuing security and advancing stability in the Indo-Pacific region. Geographic access from these alliances is an important element of U.S. military posture in the Indo-Pacific region, as the majority of U.S. defense sites west of the International Date Line are located in host countries. U.S. allies Japan, the Philippines, and Australia perceive China's military buildup and aggressive actions as a growing threat to their national security and are deepening defense collaboration with the United States. Nevertheless, differences remain in the specific activities each allied country might be willing to participate in or to support, driven by differences in political will and the capabilities of their militaries. As the United States continues to enhance its capacity to respond to Chinese aggression, it must navigate these potential differences in the parameters of cooperation during a conflict as well as questions about how to best adapt its force posture, capabilities, and defense industrial base.

Key Findings

- The PLA plans to counter military action by the United States and potentially U.S. allies in the event of a regional conflict. Since at least the early 2000s, China's leadership has viewed the U.S. military's presence and alliance activities in the Indo-Pacific as threatening, and it continues to express concern about new developments that combine deepening allied cooperation with an expanded U.S. military footprint in the region.
- China's assertion that it will militarily defend its disputed territorial and maritime claims threatens U.S. allies and security partners in the Indo-Pacific. Should China's leadership decide to use force to enforce its claims in the South or East China Seas or with regard to Taiwan, this aggression could trigger U.S. defense commitments.
- The PLA continues to improve the quality and quantity of military capabilities needed to counter U.S. military action in the event of a conflict, including a large arsenal of ballistic and cruise missiles, air defense systems, advanced fighter jets, maritime forces, and EW capabilities.
- The PLA has also developed a redundant and resilient architecture for C4ISR to protect its own systems from attack, and it increasingly has the capability to disrupt or paralyze an adversary's C4ISR system. China's advancements in counter-C4ISR capabilities such as directed energy weapons and anti-satellite

technologies may threaten the United States' ability to access its own C4ISR networks for reconnaissance, targeting, and other functions in peacetime or wartime.

- Despite improvements to a broad suite of capabilities, the PLA still faces challenges in logistics and sustainment. The PLA's maintenance system may struggle to quickly repair and resupply its advanced platforms and weapons systems under harsh battlefield conditions, impacting the PLA's ability to project and sustain combat power.
- Chinese military experts perceive that U.S. and allied militaries are adapting to the PLA's improved capabilities and force posture. They observe that the United States and its allies are strengthening their missile defense capabilities while also working to improve their ability to strike China's forces. They also note that new operational concepts emphasizing geographic dispersion and joint integration across warfighting domains could also contribute to U.S. and allied forces' survivability.
- U.S. allies in the Indo-Pacific are adjusting their defense policies in response to Beijing's aggressive military posture and activities. Japanese leaders are concerned about a possible regional conflict and therefore seek to enhance Japan's military capabilities and interoperability with the United States. The current government of the Philippines views cooperation with the United States and other partners as core elements of its response to China's military and gray zone threats in the South China Sea and its own military modernization efforts. Australia seeks to deepen security cooperation with the United States, its chief defense partner, while reposturing its own military for the possibility of great power conflict. Nevertheless, allies' interest in working with the United States to address threats from the PLA does not necessarily imply a commitment to allow U.S. military access to their bases during a conflict or guarantee the participation of allied military forces.

Part IV: Taiwan and Hong Kong

Chapter 9: Taiwan

China's actions toward Taiwan in 2024 have been intended to signal strong discontent with the new administration of Lai Ching-te, a president whom the CCP regards as a "separatist" challenging Beijing's stated aspiration to "reunify" Taiwan with the Mainland. China has sustained a high level of military, diplomatic, and economic pressure toward the ruling Democratic Progressive Party (DPP) of Taiwan, timing actions around events both to undermine DPP leadership and to extend olive branches to opposition figures who signal support for closer cross-Strait relations. China sought to dissuade Taiwan's voters from electing Lai by harshly denouncing him while waging robust influence and disinformation campaigns asserting that a vote for Lai would lead to war. The CCP has expanded its toolkit of tactics for intimidating Taiwan, including greater usage of the China Coast Guard (CCG) around the outlying islands, new guidelines for punishing "separatists," and heightened harassment

of Taiwan travelers to the Mainland. Soon after Lai's inauguration, China launched large military exercises around the island, similar to exercises in each of the past two years and designed to suggest that Beijing's planning for hostilities includes blockade scenarios. China continues near-daily incursions into Taiwan's air defense identification zone (ADIZ) and waters. Taiwan has enhanced its defensive capacity through U.S. assistance and its own internal reforms, with an increased focus on military and societal resiliency. Taiwan's military continues to take notable steps to develop, manufacture, and adopt asymmetric systems and improve training for conscripts and reservists, but domestic factors and China's near-daily coercion remain challenges to this progress. The United States continues to work through the backlog of arms shipments promised to Taiwan, but a number of big-ticket systems such as F-16 fighter aircraft remain plagued by delays.

Despite China's aggressive posture, Taiwan's vibrant and advanced economy has performed strongly this year, thanks to substantial global demand for its high-value exports integral to AI and technology supply chains. China remains Taiwan's top trading partner, though trade and investment continued to shift away from the Mainland toward other partner countries, with Taiwan's exports to the United States in the first half of 2024 exceeding its exports to China for the first time in more than two decades. Internationally, Taiwan has sought to deepen its engagement with like-minded democracies. Countries in Europe and the Indo-Pacific have expressed interest in peace and stability in the Taiwan Strait, even while China continues its efforts to isolate the island diplomatically. China is also pressing countries across the world to voice support for its preferred framing that cross-Strait relations are an internal matter for China and in support of "reunification." U.S.-Taiwan relations remain constructive and robust, with the United States continuing to signal and provide steadfast support for Taiwan in a variety of ways, even as China's disinformation efforts attempt to paint the United States as an unreliable partner.

Key Findings

- Lai's election to the presidency signals broad support for his policies among Taiwan's populace; however, the DPP's losses in Taiwan's legislature may restrain the Lai Administration's agenda. Beijing reacted to Taiwan exercising its right to self-governance with immediate, extreme rhetoric as well as policy adjustments aimed at intimidating Taiwan. China escalated its indirect threats against not only Taiwan's leadership but also its international supporters by defining "separatism" in law as a crime punishable by death in certain circumstances.
- China has refused to communicate directly with the new DPP president and has chosen to intensify its political coercion efforts against Taiwan, suggesting that the frigid relationship between the DPP Administration and the Mainland will persist. Rather, the CCP has shown that it would prefer to go around the Lai Administration by interacting with opposition parties and interfering in Taiwan's political system.

- China has intensified its military coercion around Taiwan, aiming to gain operational experience, degrade the Taiwan military's readiness, and intimidate the island's population while routinizing its increased presence. The PLA launched its second named military exercise around Taiwan immediately after Lai's inauguration in May, as well as a follow-on exercise in October, and continued to violate the island's ADIZ on a near-daily basis with conventional aircraft, drones, and balloons.
- Beijing has also expanded its use of so-called "gray zone" tactics—blurring the line between military and non-military actions—against Taiwan in the maritime and air domains under the guise of law enforcement and administrative activity in an attempt to propagate its claim that Taiwan and the Taiwan Strait are its territory. The CCG's robust role in the May PLA exercise was novel and suggested that the CCG could augment future PLA operations against Taiwan. The reported presence of CCG ships around Taiwan's outlying islands outside the context of a PLA exercise is similarly concerning, laying the groundwork for a more persistent presence and representing an attempt to extend "lawfare" to its gray zone activities. China's unilateral modifications of civilian flight paths in the Taiwan Strait also abrogated a prior commitment made in 2015 to allay Taiwan's security concerns, increasing the risk of an air accident and furthering its efforts to nullify the median line.
- Taiwan continues to shore up its remaining diplomatic partners in the face of Chinese pressure to break ties while deepening its unofficial relationships with major countries in North America, Europe, and Asia. Using various points of leverage and influence, Beijing has engaged in an effort to get other countries to endorse its false claim that the 1971 UN General Assembly Resolution 2758 recognizes China's sovereignty over Taiwan as a matter of international law and to make statements supportive of China's unification goals for Taiwan.
- Taiwan's economy performed strongly in 2024, with AI-fueled demand for leading-edge chips and other high-tech manufactured products bringing about a surge in exports and a runup in the domestic stock index. This growth came as cross-Strait trade tensions heightened in the form of China's Ministry of Finance revoking preferential tariff exemptions on 134 products Taiwan exports to the Mainland in a move announced less than two weeks after Lai's inauguration.
- Approved outbound foreign direct investment (FDI) from Taiwan into the Mainland fell 39.8 percent year-over-year in 2023 to its lowest level in over 20 years. Meanwhile, approved FDI from Taiwan into the United States surged 791 percent in the same time period to $9.7 billion, a record high. In April 2024, Taiwan Semiconductor Manufacturing Company announced it would expand its planned investment in the United States over 60 percent to $65 billion after receiving a $6.6 billion federal grant as part of the CHIPS and Science Act.

Chapter 10: Hong Kong

Under the influence of China's central government, Hong Kong has installed General Secretary Xi's view of "holistic" national security, weakening the city's once vibrant institutions, civil society, and business environment. Hong Kong has experienced a serious erosion in its autonomy from the Mainland, although the manifestation of this erosion to date has been far more prominent in civil rights compared with the business environment. Hong Kong's new national security legislation, often called the Article 23 Ordinance, introduces new and ambiguous offenses that target all remnants of resistance to Beijing's control over the city's political, religious, and civil society organizations. The continued implementation of the mainland National Security Law (NSL) and the imposition of the Article 23 Ordinance, which has already been invoked to make new arrests, have diminished the former distinctiveness of Hong Kong. The vaguely defined offenses in both national security laws create an atmosphere of fear and uncertainty, intended to coerce Hong Kongers to self-censor or face legal repercussions. Political participation and expression in Hong Kong have withered as convictions rise for activities considered by the CCP to be seditious, including for singing *Les Misérables'* "Do You Hear the People Sing" and for wearing a t-shirt with the slogan "Liberate Hong Kong; revolution of our times." Hong Kong police and CCP operatives are attempting to repress international discourse on the topic by harassing overseas activists who have fled and intimidating their families who remain in Hong Kong. Local and international press organizations are self-censoring or leaving. The seven million residents of Hong Kong continue to enjoy greater freedoms than those living on the Mainland—including a freely convertible currency and comparatively uncensored internet and media—but only so far as they refrain from violating the CCP's broad and opaque conceptions of political dissent.

Hong Kong's status as an international business hub has deteriorated, and its economy has lost significant ground since the passage of the NSL in 2020. Normal business activities, including research and due diligence, collaboration with international colleagues, and fact-based analysis, face restrictions as Hong Kong's definition of national security expands. The changes raise questions about Hong Kong's ability to maintain its position as the financial connecter between mainland China and the world. Hong Kong's stock markets hit symbolic lows in 2024, while global trade increasingly bypasses Hong Kong for mainland Chinese ports. Despite the relaxation of COVID controls in 2023, international firms and expats continue their exodus from Hong Kong. The impacts have been pronounced within the legal sector, where notable international law firms have downsized their physical presence or left entirely. Meanwhile, mainland firms and people have moved into Hong Kong for its perceived comparative opportunities as mainland China's economic slowdown worsens. Hong Kong's pro-Beijing leadership, desperate for new sources of economic growth, welcomes these trends. Beijing uses Hong Kong to further its military aims through Hong Kong's place in the Greater Bay Area economic zone, funneling capital into Chinese technology startups. Hong Kong's looser business restrictions,

which historically have supported Hong Kong's status as a global legal and business hub, now are used by bad actors to circumvent sanctions and export controls. Although notable pockets of society, including the business community, remain sanguine about Hong Kong's status as a regional financial and trade hub, that status was based on a set of freedoms and the rule of law, which Beijing is actively eroding.

Key Findings

- Imposition of the Article 23 Ordinance further equips Hong Kong's government with legal tools to oppress any vestiges of dissent. Hong Kong's robust civil society, which once set it apart from the Mainland, is being eroded and replaced with a society where individuals, religious organizations, and the press must censor themselves or face possible criminal prosecution for activities that were previously protected by law.
- The rule of law in Hong Kong is under threat. Hong Kong's courts no longer maintain clear independence from the government and are being weaponized as the Article 23 Ordinance is enforced. The court's verdict in more than a dozen of the Hong Kong 47 cases to convict pro-democracy advocates for offenses that allegedly threatened national security, and subsequent resignations by international jurists in protest, illustrate the degradation of the city's judicial integrity.
- Imposition of the Article 23 Ordinance introduces uncertainty for businesses in Hong Kong. Firms and business professionals could potentially face criminal conviction for conducting normal business activity, including research, international collaboration, and due diligence.
- Hong Kong's repressive new security regime not only threatens Hong Kong residents but also can endanger foreign business professionals in Hong Kong and be wielded as a cudgel to repress the overseas activist community, including in the United States, through its extraterritorial application.
- Chinese nationals and businesses have flooded Hong Kong's labor force and economy, advancing Beijing's ambitions to integrate Hong Kong along with Macau and nine nearby mainland Chinese cities into the broader Greater Bay Area economic hub.
- Hong Kong has become a key transshipment node in a global network that assists Russia and other adversaries in evading sanctions and circumventing export controls. This diminishes the efficacy of U.S. and allied government efforts to advance important national security interests, and it exposes Western investors, financial institutions, and firms to financial and reputational risks when they do business in Hong Kong.

THE COMMISSION'S 2024 KEY RECOMMENDATIONS

The Commission considers 10 of its 32 recommendations to Congress to be of particular significance. The complete list of recommendations appears at the Report's conclusion on page 733.

The Commission recommends:

I. Congress establish and fund a Manhattan Project-like program dedicated to racing to and acquiring an Artificial General Intelligence (AGI) capability. AGI is generally defined as systems that are as good as or better than human capabilities across all cognitive domains and would usurp the sharpest human minds at every task. Among the specific actions the Commission recommends for Congress:

- Provide broad multiyear contracting authority to the executive branch and associated funding for leading artificial intelligence, cloud, and data center companies and others to advance the stated policy at a pace and scale consistent with the goal of U.S. AGI leadership; and
- Direct the U.S. secretary of defense to provide a Defense Priorities and Allocations System "DX Rating" to items in the artificial intelligence ecosystem to ensure this project receives national priority.

II. With respect to imports sold through an online marketplace, Congress eliminate Section 321 of the Tariff Act of 1930 (also known as the "de minimis" exemption), which allows goods valued under $800 to enter the United States duty free and, for all practical purposes, with less rigorous regulatory inspection. Congress should provide U.S. Customs and Border Protection adequate resources, including staff and technology, for implementation, monitoring, and enforcement.

III. Congress consider legislation to eliminate federal tax expenditures for investments in Chinese companies on the Entity List maintained by the U.S. Department of Commerce, or identified as a Chinese military company on either the "Non-Specially Designated National (SDN) Chinese Military-Industrial Complex Companies List" maintained by the U.S. Department of the Treasury or the "Chinese military companies" list maintained by the U.S. Department of Defense. Among the tax expenditures that would be eliminated prospectively are the preferential capital gains tax rate, the capital loss carry-forward provisions, and the treatment of carried interest.

IV. To enhance the effectiveness of export controls, Congress should:

- Improve the analytic and enforcement capabilities of the U.S. Department of Commerce's Bureau of Industry and Security (BIS) by providing resources necessary to hire more in-house experts; establish a Secretary's Fellows Program to more effectively attract interagency talent; expand partnerships with the national labs; increase access to data and data analysis tools, including the acquisition of proprietary

datasets and modern data analytic systems; and hire additional agents and analysts for the Office of Export Enforcement.

- Amend the Export Control Reform Act to require that within 30 days of granting a license for export to entities on the Entity List, including under the Foreign Direct Product Rule, BIS shall provide all relevant information about the license approval to the relevant congressional committees, subject to restrictions on further disclosure under 50 U.S.C. § 4820(h)(2)(B)(ii).
- Direct the president to:
  - Designate a senior official to coordinate efforts across the Administration to prioritize bilateral and multilateral support for U.S. export control initiatives; and
  - Establish a Joint Interagency Task Force, reporting to and overseen by the national security advisor and with its own budget and staff, to assess ways to achieve the goal of limiting China's access to and development of advanced technologies that pose a national security risk to the United States. The task force should include designees from the U.S. Departments of Commerce, Defense, State, Treasury, and Energy; the intelligence community; and other relevant agencies. It should assess the effectiveness of existing export controls; provide advice on designing new controls and/or using other tools to maximize their effect while minimizing their negative impact on U.S. and allied economies; and recommend new authorities, institutions, or international arrangements in light of the long-term importance of U.S.-China technology competition.
  - Codify the "Securing the Information and Communications Technology and Services Supply Chain" Executive Order to ensure that as the authority is used more robustly, challenges to its status as an executive order will not constrain BIS's implementation decisions or delay implementation.

V. Congress consider legislation to:

- Require prior approval and ongoing oversight of Chinese involvement in biotechnology companies engaged in operations in the United States, including research or other related transactions. Such approval and oversight operations shall be conducted by the U.S. Department of Health and Human Services in consultation with other appropriate governmental entities. In identifying the involvement of Chinese entities or interests in the U.S. biotechnology sector, Congress should include firms and persons:
  - Engaged in genomic research;
  - Evaluating and/or reporting on genetic data, including for medical or therapeutic purposes or ancestral documentation;

- Participating in pharmaceutical development;
- Involved with U.S. colleges and universities; and
- Involved with federal, state, or local governments or agencies and departments.

- Support significant Federal Government investments in biotechnology in the United States and with U.S. entities at every level of the technology development cycle and supply chain, from basic research through product development and market deployment, including investments in intermediate services capacity and equipment manufacturing capacity.

VI. To protect U.S. economic and national security interests, Congress consider legislation to restrict or ban the importation of certain technologies and services controlled by Chinese entities, including:

- Autonomous humanoid robots with advanced capabilities of (i) dexterity, (ii) locomotion, and (iii) intelligence; and
- Energy infrastructure products that involve remote servicing, maintenance, or monitoring capabilities, such as load balancing and other batteries supporting the electrical grid, batteries used as backup systems for industrial facilities and/or critical infrastructure, and transformers and associated equipment.

VII. Congress direct the Administration to create an Outbound Investment Office within the executive branch to oversee investments into countries of concern, including China. The office should have a dedicated staff and appropriated resources and be tasked with:

- Prohibiting outbound U.S. investment through a sector-based approach in technologies the United States has identified as a threat to its national or economic security;
- Expanding the list of covered sectors with the goal of aligning outbound investment restrictions with export controls. The office should identify and refine the list of covered technologies in coordination with appropriate agencies as new innovations emerge; and
- Developing a broader mandatory notification program for sectors where investment is not prohibited to allow policymakers to accumulate visibility needed to identify potential high-risk investments and other sectors that pose a threat to U.S. national or economic security. In addition to direct investments, the notification regime should capture passive investment flows to help inform debates around the expansion of prohibitions to cover portfolio investment.

VIII. Congress amend the Consumer Product Safety Act to (1) grant the U.S. Consumer Product Safety Commission (CPSC) unilateral mandatory recall authority over products where the Chinese seller is unresponsive to requests from the CPSC for further information or to initiate a voluntary recall and the

CPSC has evidence of a substantial product hazard, defined as either failing to comply with any CPSC rule, regulation, standard, or ban or posing a substantial risk of injury to the public; and (2) classify Chinese e-commerce platforms as distributors to allow for enforcement of recalls and other safety standards for products sold on these platforms.

IX. Congress repeal Permanent Normal Trade Relations (PNTR) for China. The PNTR status allows China to benefit from the same trade terms as U.S. allies, despite engaging in practices such as intellectual property theft and market manipulation. Repealing PNTR could reintroduce annual reviews of China's trade practices, giving the United States more leverage to address unfair trade behaviors. This move would signal a shift toward a more assertive trade policy aimed at protecting U.S. industries and workers from economic coercion.

X. Congress direct the Office of the Director of National Intelligence, within 180 days, to conduct a classified assessment, and brief its findings to Congress, of the intelligence community's (IC) ability to accurately monitor strategic, nonmilitary indicators that would signal that China is preparing for imminent conflict and the extent to which China's increasing lack of transparency affects the IC's ability to monitor this information. The assessment should include, but not be limited to, the following:

- The IC's ability to monitor:
  - China's energy storage locations and stockpiling rates, particularly for crude oil, coal, and natural gas;
  - Production shifts from civilian to military industries;
  - China's national defense mobilization system; and
  - China's strategic reserves and their compositions and locations;
- The IC's ability to coordinate with non-Title 10 and -Title 50 federal agencies that have technical expertise in agriculture and trade to monitor China's food and energy stockpiling and any derived indicators that may signal a potential preparation for conflict;
- Whether the IC's current geospatial intelligence posture is adequate to compensate for the loss of open source information from China; and
- The desirability and feasibility of establishing an Energy Strategic Warning system involving coordination between relevant entities including the National Geospatial-Intelligence Agency and the U.S. Departments of Energy, Commerce, State, and the Treasury.

PART I

THE YEAR IN REVIEW

CHAPTER 1: U.S.-CHINA ECONOMIC AND TRADE RELATIONS (YEAR IN REVIEW)

Abstract

China's economy grew in 2024, albeit at a much slower pace than it did pre-pandemic. Chinese officials have introduced stimulus measures throughout the year, including a series of announcements in September and October that will likely provide a short-term boost to economic growth. While the latest stimulus round has the potential to be among the largest China has passed to deal with the current crisis, the measures are insufficient in scale compared to the scope of China's economic challenges, and their long-term impact is questionable. The fallout from the property sector collapse continues to be China's largest domestic economic headwind and a source of weakness for local government finances and consumer spending. Officials are focused on mitigating systemic economic risks and achieving a controlled deflation of the property bubble rather than reversing the sector's decline. Although Chinese policymakers have repeatedly stated their intention to increase the contributions of services and consumption to economic growth, in reality, China has doubled down on a variant of its traditional manufacturing and export model. China has increased government subsidies and targeted supply-side stimulus toward favored industries, especially those involving advanced technology. The Chinese Communist Party's (CCP) prioritization of supply-side policies aims to further strengthen China's manufacturing base and increase its self-sufficiency while simultaneously increasing Party-state control over domestic capital allocation and global supply chains and increasing dependency by other nations. While this strategy has led to China's emergence as a leader in the manufacture and export of goods such as solar panels and electric vehicles (EVs), China's export of excess capacity is leading to increasingly aggressive pushback from China's major trading partners and the imposition of tariffs by the United States, the EU, and others. Concerned about the impact of rising Chinese imports on their own prospects for development, some emerging economies have launched trade investigations or imposed tariffs to protect domestic industries.

Key Findings

- Chinese authorities have reasserted and expanded control over the economy centrally, regionally, and locally. General Secretary

of the CCP Xi Jinping's vision for future economic growth in China is politically driven and differs from Western economic orthodoxy.

- The continuing slowdown in economic expansion has led to greater reliance on specific growth drivers, allocating capital to those targeted sectors and exporting excess capacity to sustain growth.
- China continues to rely on manufacturing and exports to drive growth while also trying to move up the value chain to produce and export high-technology goods. This growth strategy assumes the rest of the world will continue to absorb China's excess capacity at the expense of their own domestic manufacturing and technology sectors.
- China has pivoted from an emphasis on aggregate gross domestic product (GDP) growth to a strategy that targets "higher quality" production in emerging technologies. China hopes that becoming a dominant producer of high-tech goods will allow it to sidestep systemic economic problems and enhance its overall global economic position and national power.
- Substantial risks remain in the property sector, which have already had serious ramifications for the Chinese economy. The CCP introduced new support measures for the property sector in 2024 and helped local government financing vehicles (LGFVs) refinance maturing debt. However, the scale of unfinished housing and the large amount of local and regional government debt far exceeds the amount of capital allocated for financial support. These issues may weigh down economic performance in the near future as households await delivery of apartments for which they have made substantial down payments and developer bond defaults reverberate through the financial sector.
- While Chinese data measuring youth unemployment have shown recent improvement, China's college-educated youth are growing more pessimistic about their personal financial situation as they continue to enter a workforce that prioritizes manufacturing jobs they do not want and focuses on skills they do not have. A combination of slowing growth post-pandemic and targeted policy crackdowns have weakened some consumer technologies and other service sectors that previously employed a large majority of youths. To the extent that the CCP's societal legitimacy is based on delivering economic growth and opportunity, the increase in youth unemployment has called that into question.
- The CCP has directed state-owned banks and asset managers to intervene to prop up the stock market and issue credit to state-owned enterprises (SOEs) and regional and local governments on favorable terms. As long as these measures remain a common practice, Chinese households will remain skeptical of passive long-term domestic investment opportunities as a way to generate wealth, forcing them to save a larger share of their income. Uncertainty regarding Chinese investment opportunities dampens China's attempts to bolster consumption.

Introduction

China has renewed its strategy of relying on export-oriented manufacturing as a primary driver of growth, expanding exports to encompass traditional goods and advanced technologies. Chinese officials believe new investments in advanced technology will also mitigate potential disruptions brought about by a more hostile geopolitical environment while simultaneously revitalizing China's productivity growth, which has slowed dramatically over the past decade. The United States, EU, and other trade partners have taken steps to address China's unfair trade practices that they deem to be market-distorting; however, the CCP has not been willing to manage the economy consistent with its obligations under the WTO. As longstanding trading partners take actions to counter these challenges, China has deepened its close relationships with adversarial countries, including Russia. This section examines key developments and trends in China's domestic economy and external economic relations, including U.S.-China bilateral relations and other key relationships.

China's Domestic Macroeconomic Outlook

As China seeks to deleverage and manage challenges posed by the property sector, its leaders are faced with two broad pathways to drive the country's economy: double down on the traditional export-led economic growth model they have long pursued or shift the economy structurally toward stronger household consumption as the new primary driver of economic expansion.[1] Over the past year, China has decisively shown that it will continue its traditional growth path.

Figure 1: Year-over-Year Change in Chinese Loans by Sector, Q1 2013–Q1 2024



Source: People's Bank of China, "*China Loan: Manufacturing, China Loan: Real Estate* [2013–2024]," via CEIC database.

China's focus on manufacturing stems from a long tradition of economic planning that emphasizes industrial production and infrastructure development to promote growth, facilitate economic modernization, and ensure Party control over the economy. Chinese officials have built a system predicated on low consumption and high savings where capital can be funneled by government-controlled banks into investments in sectors prioritized by the Party.[2] In this model, household consumption is at odds with Xi's goals of strengthening the Party and making China the dominant industrial and technological superpower.[3] Putting an increased portion of the nation's wealth in the hands of ordinary citizens could decrease the Party's control over economic resources, which is core to its ability to exert power through its authoritarian hierarchy.* A system based on investment-led growth reinforces the political status quo by preserving the Party's grip on the economy. Overinvestment makes China's industrial base dependent on cheap financing to survive. Because this financing is overwhelmingly managed by state banks, Chinese businesses are subservient to Party interests.[4]

An increasingly hostile geopolitical environment, in which other countries have implemented export controls and pursued de-risking, has also motivated China to double down on this approach.[5] Through increased investments in manufacturing, Xi hopes to make the Chinese economy more self-sufficient while simultaneously increasing the control China exerts over global supply chains.[6] Top Chinese officials believe industrial security sits at the core of China's stability.[7] Though a reorientation toward consumption could revitalize overall GDP growth, Chinese leaders have long believed a slowdown was inevitable.[8] Nonetheless, they appear willing to accept slower growth in exchange for increased Party control.[9]

Traditional Growth Drivers

Manufacturing

Chinese officials have reemphasized manufacturing as the central pillar of the country's economic growth and are attempting to supplement their dominance of commodified manufactured goods with new, advanced technological products. China has structured its economy to dominate global manufacturing. In 2022, value-added manufacturing contributed around 27 percent of China's GDP, the highest percentage among any large economy.†[10] Given that China's GDP is the second largest in the world, this means that by 2022, the most recent year with available data, China accounted for 30 percent of the world total of value-added manufacturing.‡[11] China's share of value-added manufacturing dwarfs its 18 percent share of global GDP; following China's policy

*For more on how the Chinese Party-state exercises control, see U.S.-China Economic and Security Review Commission, Chapter 1, "CCP Decision-Making and Xi Jinping's Centralization of Authority," in *2022 Annual Report to Congress*, November 2022, 25–120.

†Manufacturing contributed 24 percent of South Korea's GDP, 19 percent of Germany's GDP, 19 percent of Japan's GDP, and 11 percent of U.S. GDP as of most recent data in either 2022 or 2023. World Bank, "Manufacturing, Value Added (% of GDP) [2022–2023]."

‡In 2023, China's manufacturing trade surplus was higher than Germany and Japan's combined surplus during their respective peaks from 1970 to 1980, indicating that China increasingly dominates global manufacturing output at the expense of its trade partners. Brad W. Setser, Michael Weilandt, and Volkmar Baur, "China's Record Manufacturing Surplus," *Council on Foreign Relations*, March 10, 2024.

shifts to support new manufacturers, this share is likely trending higher.[12]

However, in 2022, Chinese consumers only accounted for 13 percent of global consumption.[13] Instead, China continues to be heavily reliant on external demand and global willingness to absorb its manufacturing surplus. With Chinese demand insufficient to absorb the country's excess of cars, appliances, and other products, about 45 percent of China's manufacturing output is being exported abroad.[14]

Chinese policymakers are increasing export-oriented manufacturing, with particular emphasis now on higher-technology products. Building upon industrial and innovation policies such as Made in China 2025, the Innovation-Driven Development Strategy, and the 14th Five-Year Plan, in September 2023 Xi called upon the nation to develop "new quality productive forces," allowing for China to "guide the development of strategic emerging industries and future industries."[15] He echoed this message again in December 2023 at the annual Central Economic Work Conference, which sets the national agenda for the country's economy and its financial sector.[16] The slogan also featured prominently during the March 2024 meeting of the National People's Congress and in the CCP Central Committee's Third Plenum in July 2024.[17] In practice, the phrase has been interpreted to mean a reemphasis on manufacturing, particularly in clean energy and other "future industries," to offset the economic drag caused by the collapse of the country's housing bubble.*[18]

Chinese lending to the manufacturing sector, which was already experiencing rapid growth following China's pandemic export boom, has matched this rhetoric. From 2020 to 2023, Chinese industrial lending grew at an average 24.2 percent year-over-year.[19] This is more than four times faster than the four years prior to COVID-19, when it grew an average of 5.2 percent.†[20] In Q1 2024, this amounted to $623 billion in new loans to the sector from the previous year.[21] Exports are surging as well. From 2019 to 2023, Chinese manufacturing exports grew 40.5 percent.[22] In comparison, global trade grew by 24.5 percent over that same time period.[23] This growth has been driven in part by what Chinese officials call the "new three sectors": solar panels, lithium-ion batteries, and EVs.[24] From 2019 to 2023, exports for each have grown 77 percent, 399 percent, and 7,690 per-

*The official list of "future industries" published by China's Ministry of Industry and Information Technology in January 2024 spans several broad fields such as manufacturing, information, materials, energy, space, and health but also mentions specific items such as humanoid robots, nanomanufacturing, quantum computing, nuclear fusion, hydrogen energy, exploration of the moon and Mars, deep-sea mining, and genetic technologies. *Xinhua*, "China Releases Full Text of Government Work Report," March 13, 2024; China's Ministry of Industry and Information Technology, *MIIT and Seven Other Departments' Opinions on the Implementation of Promoting Innovation and the Development of Future Industries* (工业和信息化部等七部门关于推动未来产业创新发展的实施意见), January 29, 2024. Translation.

†In comparison, over the same time period, loan growth toward services and real estate were much more muted at 11.8 percent and 4.4 percent, respectively. However, not all this industrial lending is going toward new productive capacity. Researchers at Rhodium Group reported that this credit growth has been inflated by lending to local government-related entities and financial speculation. They have shown that the share of loans to manufacturing companies in overall new industrial credit declined to 63 percent in the fourth quarter of 2023, down from 80 percent in early 2020. Even though this is a sign of weak credit demand in the sector, lending is still elevated and policymakers are also leaning on other avenues to ensure financing reaches industries covered by the "new productive forces." People's Bank of China, "*China: Financial Institutions: Property Loans, China: Fin Inst: Med/Long Term [MLT] Service Sector Loans*," via Haver Analytics; *Bloomberg*, "China's Surging Industrial Loans Aren't Going to Its Factories," May 7, 2024.

cent, respectively.*[25] Even with these export surges, the country's production capacity and potential future exports are more worrying for China's trading partners.[26] China now has the capacity to manufacture half of the world's 80 million new vehicles, and by 2030 its production capacity could climb to three-fourths of projected global production.[27] China has also built enough solar panel factories and battery production plants to be the sole supplier of global demand.[28] There is little expectation this will change. China accounted for 75 percent of global investments in clean technology manufacturing in 2023 and 85 percent in 2022.[29] Bloomberg Economics projects that high-tech sectors will contribute 22.7 percent of China's GDP by 2026, almost double the 11.9 percent they comprised in 2017.†[30]

Simultaneously, China is trying to maintain its dominance of more traditional manufacturing industries. During the May 2023 annual meeting of a top economic policymaking body, General Secretary Xi laid out plans for a "modernized industrial system" while also retaining and upgrading traditional industries.[31] Combined with new overcapacity fears relating to China's "new three sectors," countries are increasingly concerned that the wide range of surging exports are reminiscent of the "China Shock" that happened in the years following its entry into the WTO.‡[32] Indeed, China's traditional exports are surging, with Chinese global steel exports nearing their 2015 peaks in terms of volume.[33]

China's focus on producing a wide spectrum of manufactured goods impacts the global trading ecosystem in several ways, dominating not only at the macro level but also at the product level. A group of scholars showed that China was the world's dominant producer (defined as producing more than 50 percent of global exports within a product category) of six times as many products as the United States, Japan, or any other country and twice the number of products for the EU considered as a whole.§[34] Chinese dominance is significant because it means China is currently irreplaceable for a large set of goods on international markets. China's role in supply chains also creates dependencies that give China alarming leverage over its buyers, and potentially over foreign governments, and puts its competitors at a disadvantage.[35] Furthermore, there are hardly any goods China does not make and export to some extent, even in sectors where it is not the dominant producer.¶ While China has long emphasized manufacturing and exports as a growth strategy, China now justifies its efforts in part as a reaction to its ongoing

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*Photovoltaics were defined as HS 854143, lithium-ion batteries were defined as HS 850760, and EVs were defined as HS 870380.

†High-tech sectors are defined here as EVs, batteries, solar panels, medicine, advanced equipment, IT/communications equipment and services, and research and development. For additional background, see Chapter 3, "U.S.-China Competition in Emerging Technologies."

‡The term "China Shock" was popularized by a seminal paper published in 2016 by economists David H. Autor, David Dorn, and Gordon H. Hanson, who argued that a flood of Chinese exports replaced domestic manufacturers in the United States, creating localized but highly negative impacts on import competing regions across the country. David H. Autor, David Dorn, and Gordon H. Hanson, "The China Shock: Learning from Labor Market Adjustment to Large Changes in Trade," *Annual Review of Economics* 8 (2016): 205–240.

§Products were defined at the six-digit level of the Harmonized System, which distinguishes over 5,000 different products. Sebastien Jean et al., "Dominance on World Markets: The China Conundrum," *CEPII*, December 2023.

¶While the previous analysis was done at the six-digit level of the Harmonized System, when researcher Andrew Batson looked at the four-digit level, he found zero exports from China in fewer than 50 of the possible 1,241 product categories. Andrew Batson, "China Wants Those Low-End Industries after All," *Tangled Woof*, October 3, 2023.

trade conflicts with the West and its fears over future sanctions.[36] Former People's Bank of China (PBOC) official Yu Yongding explains, saying, "Re-emphasizing the importance of comprehensiveness is a reaction to the new geopolitical reality…. [China] should be able to quickly launch or increase production of critical goods, as needed."[37] Chinese officials hope broad-based productive capacity will insulate the Chinese economy against disruptions if its companies are blocked from importing from advanced industrialized countries, while market dominance will make it irreplaceable in key nodes at every level in the global supply chain, giving it economic and potential political leverage.

Heavy state subsidization has been central to China's control of both emerging and existing industries. Conservative estimates from the Kiel Institute suggest that in 2019, Chinese industrial subsidies amounted to $242 billion (renminbi [RMB] 1.8 trillion).*[38] This is at least three to four times and up to nine times higher than in the major EU and Organisation for Economic Co-operation and Development (OECD) countries.[39] More recent data looking at some of the industries championed by China's "new productive forces" suggest direct government subsidies for some of the dominant Chinese manufacturers of green technology products could be significantly higher.[40] These estimates of direct government subsidies fail to quantify additional support measures such as access to subsidized inputs, preferential access to critical raw materials, forced technology transfers, the strategic use of public procurement, lack of foreign competition in the domestic market, and the preferential treatment of domestic firms in administrative procedures.[41]

Overall, in 2023, China's manufacturing trade surplus with the EU as a share of the EU's GDP increased by 0.5 percentage points, and its surplus with the United States remained flat as a share of U.S. GDP.[42] Emerging markets have had to absorb the brunt of China's surplus. China's manufacturing trade surplus with ASEAN more than doubled between 2019 and 2023, rising from 3 percent to 6 percent of the region's GDP.[43] China's surplus with Mexico reached 3.8 percent of Mexico's GDP in 2023, up from 2.7 percent in 2019.[44] (For a discussion of transshipment issues, see Chapter 4, "Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws.") This has galvanized some governments into action as well. After Chinese imports took nearly 20 percent of Brazil's domestic market share of steel, Brazil's Ministry of Development, Industry, Trade, and Services introduced import quotas and raised import taxes to 25 percent on 11 rolled steel products to protect domestic producers.[45] A number of other countries have followed suit, including India, Chile, Mexico, Indonesia, and South Africa.[46]

Property Sector

Chinese officials see the need to reduce leverage and excess investment in the property sector but are constrained from acting too aggressively due to the trillions of dollars in household wealth invested in real estate. Policy makers appear content to allow the sector to decline steadily while mitigating sys-

*Unless noted otherwise, this section uses the following exchange rate throughout: $1 = RMB 7.25.

temic financial risk as the sector resets. China's real estate sector has been a central pillar of its economy since the late 1990s, with sectoral growth consistently exceeding the country's GDP growth.[47] Because of this growth, some estimates suggest the sector could account for 29 percent of the country's overall GDP, more than double that of most other countries.*[48] Rapid growth, however, attracted speculation. A lack of alternative savings options meant Chinese households began to pour their massive savings into the housing market.[49] Real estate development as a share of all fixed asset investment climbed from 18 percent in 1999 to 27 percent in 2021.†[50] Real estate comprises around 70 percent of Chinese household wealth.‡[51] Just before the bubble deflated, a considerable share of the 16 billion square feet of purchased residential property was speculative investments rather than real demand.[52] Further, these properties were often presold and paid in full in advance—no deposits or down payments.[53] This generated a broad-based affordability crisis, with average sales prices rising almost 350 percent from 2006 to 2021, causing prices to become considerably higher relative to incomes.[54]

Simultaneously, Chinese developers have long been reliant on debt to sustain their activities. The sector's business model was characterized by rapid project turnover, quick sales, and high leverage.[55] As a result, the country's developers had a debt-to-asset ratio far higher than their peers in other major real estate markets like the United States or Japan.[56] Recent economic downturns exacerbated these trends. In response to economic crises in 2008, 2012, and 2015, Chinese policymakers stimulated the economy by extending credit to the non-financial private sector.[57] Utilizing this stimulus, the average debt-to-asset ratio of Chinese real estate developers rose from around 72 percent in 2008 to more than 80 percent by 2021.§[58]

In August 2020, the PBOC and the Ministry of Housing and Urban-Rural Development directed representatives from the largest private and state-owned companies in the sector to reduce their leverage.[59] The set of policies became known as the "three red lines."¶ Chinese officials intended the policy to prevent developers

*This is a contested value with estimates and the methodologies used to derive them ranging widely. Economists Kenneth Rogoff of Harvard and Yuanchen Yang of the International Monetary Fund (IMF) estimate the sector to be 28.7 percent of the economy, a widely cited figure; economists at the Asian Development Bank (ADB) estimate it to be closer to 15.4 percent; and economists at Goldman Sachs, an investment bank, estimated its value to be 23 percent. Regardless, the share of the property sector in China's GDP is large. *Economist*, "Measuring the Universe's Most Important Sector," November 26, 2021.

†As a share of overall GDP, investment in real estate development climbed from about 4 percent in 1999 to a peak of 14.8 percent in 2014. By 2021, it had fallen to 12.8 percent. Tianlei Huang, "Why China's Housing Policies Have Failed," *Peterson Institute for International Economics*, June 2023, 22.

‡Estimates put the 2012 share of housing in urban wealth at 78.7 percent and rural wealth at 60.9 percent. Including land and housing raised the share to 81.3 percent of rural wealth. In comparison, this is more than double the average U.S. household, which holds an estimated 36 percent of total wealth in real estate. Briana Sullivan, Donald Hays, and Neil Bennett, "The Wealth of Households: 2021," *United States Census Bureau*, June 2023, 4; Yu Xie and Yongai Jin, "Household Wealth in China," *Chinese Sociological Review*, 47:3 (2015): 203–229.

§Debt was even more concentrated within China's largest property developers. The five largest developers measured by revenue and debt ratio at the end of 2020 were China Evergrande (84.77 percent), Country Garden (87.25 percent), Vanke (81.28 percent), Zhongnan (86.54 percent), and Sunac (83.96 percent). Tianlei Huang, "Why China's Housing Policies Have Failed," *Peterson Institute for International Economics*, June 2023, 5.

¶The "three red lines" criteria to which developers must adhere are (1) a liability-to-asset ratio less than 70 percent, (2) net debt not exceeding equity, and (3) enough cash on hand to cover short-term borrowing. Developers who meet all three criteria are allowed to increase their overall debt by at most 15 percent annually. If a developer breaches one red line, it is allowed to grow its debt by 10 percent annually. If a developer breaches two red lines, it is allowed to grow its debt

from incurring additional debt until they reduced their liabilities to more sustainable levels.[60] In December 2020, regulators further tightened lending rules and imposed caps on banks' exposure to property developer loans and mortgages.*[61] Policymakers hoped this would force the deeply indebted sector to deleverage while also limiting the financial sector's exposure to the property sector, avoiding potential systemic risks.†[62] Although regulators likely expected some pain from these reforms, they miscalibrated their impact, which was amplified by China's Zero-COVID lockdowns.[63]

In 2021, real estate developers across the country began defaulting on their debt.[64] By 2022, the entire sector was in a deep recession. Across the country, real estate investment and property sales fell by 9 percent and 27 percent, respectively, compared to 2021.[65] This drop in cash flow caused a 17 percent decrease in housing completions and a nearly 40 percent decline in housing starts.[66] The year 2022 was the sector's worst since China's nationwide housing market was created in 1998.

Falling property values and investment losses have destroyed trillions in household wealth, particularly for the middle class, who were supposed to galvanize the shift to consumption-led growth.[67] This demographic has instead scaled back consumption across the board in the absence of stronger policy support for the property sector.[68] Fallout from the property sector also spilled over into the banking sector, impacting trusts and wealth management products that had concentrated investments in property under the misconception that housing values would only rise.[69] Many individual investors who put their savings into the funds have not received their principal back, much less the outsized returns they hoped for at inception.[70]

While the sector has begun to stabilize, it still remains the largest drag on Chinese growth. In the first seven months of 2024, China's housing sales and investment for new housing projects fell by 18.6 percent and 10.2 percent, respectively, compared with the same period in 2023.[71] China still faces a surplus of unfinished homes. At the end of 2023, Nomura Securities, a Japanese financial firm, estimated that there were 20 million units of presold homes that still need to be finished and would require $440 billion in funding to complete.‡[72] Under the guidance of the country's regulators, Chinese developers have devoted a greater portion of their remaining resources to completing presold unfinished projects.

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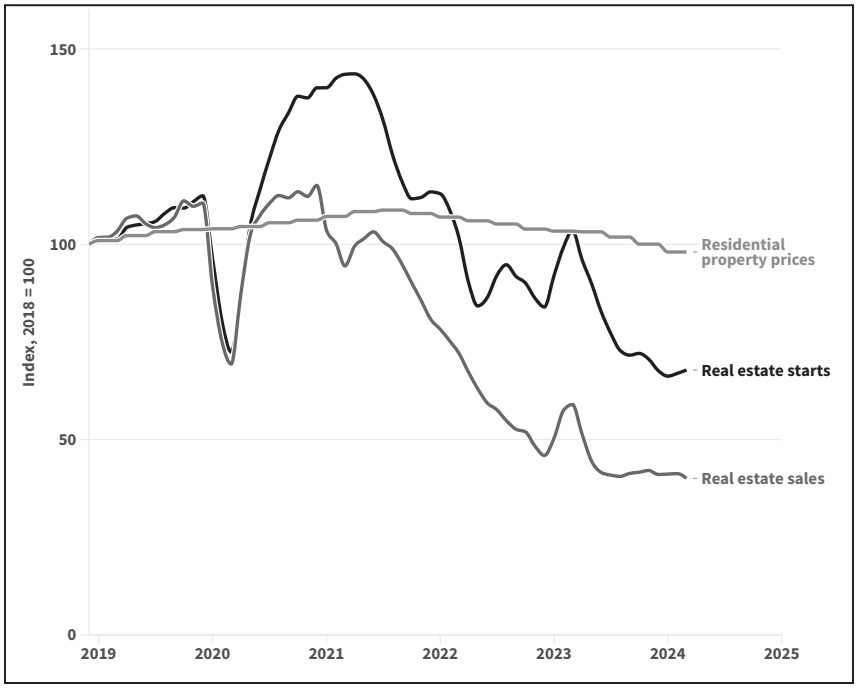
by 5 percent annually. If all three red lines are breached, the developer is not allowed to incur any new debt. UBS Asset Management, "China's Three Red Lines: Opportunities in China Real Estate," January 11, 2021.

*The rule required China's largest state-owned banks to reduce loan exposure to property developers to 40 percent or less in their total loan balance and mortgage lending to 32.5 percent or less. Smaller banks faced stricter requirements and lower caps on the allowed exposures to developer loans and mortgages. All lenders that exceeded the caps when they were imposed were allowed a grace period of up to four years to meet these requirements. Tianlei Huang, "Why China's Housing Policies Have Failed," *Peterson Institute for International Economics*, June 2023, 13.

†Real estate loans—including property developer loans and household mortgages—as a share of all loan balances in the Chinese banking sector grew from less than 20 percent in 2011 to more than 27 percent in 2021. This growth was often concentrated within specific banks. Importantly, the non-performing loan (NPL) ratio for property developer loans across the banking sector increased nearly threefold from 2013 to 2019 to around 6 percent. Tianlei Huang, "Why China's Housing Policies Have Failed," *Peterson Institute for International Economics*, June 2023, 5.

‡Others, like Goldman Sachs, estimate the value to be even higher, calculating that Chinese developers need $553 billion to complete housing they presold to buyers and then failed to finish. Lulu Yilun Chen and Tom Hancock, "China's Private Builders Face $553 Billion Gap to Complete Homes," *Bloomberg*, April 14, 2024.

Figure 2: China's Residential Real Estate Sector, Prices, Sales, Starts, 2019–2024



Note: Sales and starts are adjusted with a three-month rolling average. Residential property prices are a quarterly data series.
Source: China's National Bureau of Statistics, "*New Residential Sales, New Residential Starts* [2019–2024]," via Haver Analytics; Bank for International Settlements, "*Residential Property Prices for China* [2019–2024]," via Federal Reserve Economic Data.

In 2024, Chinese officials focused on targeted policies that support demand and address the supply glut. As early as 2023, Chinese cities had taken the lead in reducing local barriers to home purchases, which they continued to do through 2024 in the form of relaxed credit requirements for first-time homebuyers and lower down payment requirements.[73] In early 2024, the Chinese government began designating a "whitelist" of in-progress housing projects whose developers would be allowed to apply for bank loans in order to complete and deliver housing to owners.[74] The program is available even to developers who have already defaulted on existing loans.[75] In May 2024, the government announced a long-awaited rescue package. Policymakers at the central level made available $42 billion (RMB 305 billion) in central bank funding to help government-backed firms buy excess inventory.[76]

The scale, however, is likely insufficient.[77] Goldman Sachs estimates it would cost $1.1 trillion (RMB 7.7 trillion) to lower the country's housing supply to its 2018 levels.*[78] This amounts to 25 times the size of the rescue fund. Chinese markets recognized the fund's inadequate size, and prices have continued to fall. Month-

*Goldman's calculations are based on the assumption that local governments and state companies can purchase inventory at 50 percent of market prices.

over-month new home prices, excluding state-subsidized housing, slid 0.58 percent in April 2024, while the value of existing homes dropped a further 0.94 percent.*[79] Both were the steepest declines in a decade.[80] As of the first half of 2024, Chinese housing prices have experienced a total decline of 13 percent from their 2021 peak levels.[81]

Because such a large portion of household wealth is held as real estate, adjustments in the property sector have weakened consumer sentiment.[82] Investment also continues to fall, dropping nearly 10 percent year-over-year in April 2024 as businesses, investors, and individual households continue to view the sector with skepticism.[83]

Geographic misallocation of housing has exacerbated China's housing crisis. Unlike China's broader housing market, its four largest cities—Beijing, Shanghai, Guangzhou, and Shenzhen—face deep undersupply issues, generating a broader affordability crisis.† From 2002 to 2022, average prices for these cities have risen nine-fold.‡[84] This has implications for the country's societal makeup and labor market. The difficulty of purchasing property has contributed to a lower marriage rate because of the social expectation that men should own a home before marriage.[85] Lower marriage rates are likely to exacerbate China's looming demographic crisis, as an aging population saves for retirement instead of spending. High costs also constrain local labor markets, crowding out young professionals from China's most innovative and economically dynamic cities.[86] In contrast, China's real estate overcapacity is concentrated in its smaller cities in the interior of the country.§ From 2010 to 2021, those cities, referred to by Chinese statisticians as tier three cities, contributed around 78 percent of the country's total housing stock, despite only hosting around 66 percent of China's urban population.[87] Those cities have been hardest hit by the market correction; real estate prices in tier three cities dropped nearly 20 percent between early 2021 and mid-2022.[88]

In 2024, a number of substantial impediments to recovery—including additional bankruptcies, local government financial stress, and declining growth—remain unresolved. While more than 50 Chinese developers have defaulted on their

*Since their peak in Q3 2021, aggregate housing prices have declined 12.4 percent through Q1 2024. Bank for International Settlements, "*Real Residential Property Prices for China*," via Federal Reserve Economic Data.

†Chinese cites can be classified by a tier system that groups similar cities based on their economic size, population, and political administration. The National Bureau of Statistics of China, in its statistics on real estate activities, covers 70 large and medium-sized major cities across China and divides them into three tiers. First-tier cities are Beijing, Shanghai, Guangzhou, and Shenzhen. Second-tier cities are Tianjin, Shijiazhuang, Taiyuan, Hohhot, Shenyang, Dalian, Changchun, Harbin, Nanjing, Hangzhou, Ningbo, Hefei, Fuzhou, Xiamen, Nanchang, Jinan, Qingdao, Zhengzhou, Wuhan, Changsha, Nanning, Haikou, Chongqing, Chengdu, Guiyang, Kunming, Xi'an, Lanzhou, Xining, Yinchuan, and Urumqi. Third-tier cities are Tangshan, Qinhuangdao, Baotou, Dandong, Jinzhou, Jilin, Mudanjiang, Wuxi, Xuzhou, Yangzhou, Wenzhou, Jinhua, Bengbu, Anqing, Quanzhou, Jiujiang, Ganzhou, Yantai, Jining, Luoyang, Pingdingshan, Yichang, Xiangyang, Yueyang, Changde, Shaoguan, Zhanjiang, Huizhou, Guilin, Beihai, Sanya, Luzhou, Nanchong, Zunyi, and Dali. Affordability is defined using the average home-price-to-income ratio, which divides the average home price by the median household income. In 2024, major Chinese cities' price-to-income ratios were: Shanghai—47.9; Beijing—33.7; Shenzhen—33.7; and Guangzhou—33. In comparison, major U.S. cities' price-to-income ratios were: New York—11; San Francisco—7.1; and Los Angeles—5.2. Numbeo, "Property Prices Index by City 2024."

‡Excluding these tier one cities, Chinese real estate prices have risen 576 percent. China's National Bureau of Statistics, "*Residential Prices By City*," via CEIC database.

§This primarily refers to China's tier three cities.

debts since 2021, many developers have become nonviable and are only avoiding bankruptcy because of policy interventions that have compelled their lenders to delay recognizing their bad loans.[89] If unresolved, this could eventually spill over, further weakening real estate prices and bank balance sheets.

China's property sector crisis revealed a foundational instability within a central pillar of China's growth model.[90] While Chinese leaders have tried to do just enough to ensure it will not become a systemic risk for the broader economy, spillovers from the cratering real estate sector will constrain local government budgets, disrupt the job market, and dampen confidence across the economy.[91] As the sector shrinks from its peak of around 29 percent of GDP to an estimated 16 percent by 2026, it will continue to be a substantial drag on the country's overall GDP growth.[92]

The deflation of the property sector bubble has negatively impacted the finances of local governments, which had regularly generated between 20 percent and 30 percent of their total income from selling land usage rights to developers between 2012 and 2023.[93] Land sale proceeds and property- and land-related taxes accounted for 37 percent of total fiscal revenue for all local governments in China in 2021.[94] For certain local governments, this reliance has been above 50 percent of total fiscal revenue, meaning the property crisis limits their ability to raise revenues.[95] Local government revenue generated from land sales dropped 23 percent in 2022 and an additional 18 percent in the first 11 months of 2023.*[96] To stabilize local government budgets, transfers from China's central government rose by 18 percent in 2022.[97] Many local governments have become reliant on the central government to stabilize their budgets.[98] For this to change, Chinese officials will need to find new revenue sources or their fiscal obligations will need to be reduced.[99]

Real estate is also one of the primary ways local governments raise and service debt, typically through special-purpose vehicles known as local government financing vehicles (LGFVs).[100] Rapid and lucrative real estate growth has meant that LGFVs have accumulated an estimated $7.5–8.2 trillion in off-balance-sheet debt (RMB 55–60 trillion), equivalent to around 45 percent of China's GDP.[101] There is little to no evidence that Beijing's policies to address these debt issues will have a long-term impact. Falling land prices also mean that local governments and LGFVs will face challenges securing new debt.[102]

Local Government Fiscal Challenges Simmer

LGFVs are taking advantage of refinancing programs and regulatory updates to shift debt around and stabilize balance sheets in ways that may do more to improve optics than to advance genuine structural reform. LGFVs face a record $651 billion (RMB 4.7 trillion) in bond maturities in 2024 that they will either need to either pay off or refinance.†[103] Some local govern-

*Land sale revenue and land- and property-related taxes as a share of aggregate local government revenue decreased from 37 percent in 2021 to 31 percent in 2022. Tianlei Huang, "Why China's Housing Policies Have Failed," *Peterson Institute for International Economics*, June 2023, 32.

†LGFV bond repayments outpaced new bond issuances from Q4 2023 through Q2 2024, indicating that LGFVs are making progress on deleveraging. Through the first half of 2024, LGFV net financing was about negative $27 billion (RMB 197 billion). *Bloomberg*, "China's $1.6 Trillion LGFV Bond Market Shrinks by Most in Years," July 8, 2024.

ments will likely take advantage of $138 billion (RMB 1 trillion) government bond fund introduced last year to refinance LGFV debt into official provincial government bonds.[104] From the perspective of the central government, the program increases transparency into total debt levels by bringing "off-balance-sheet" LGFV debt onto the books of provincial governments. LGFVs are also refinancing their own "off-balance-sheet" debt, converting non-traditional borrowings into LGFV bonds by taking advantage of a new government bond swap program.*[105] The newly issued bonds have reduced interest rates and longer maturity dates, which will help lower the risk of defaults in the near term.† While bringing the debt back onto balance sheets should help increase transparency and insight into total debt burdens, it may also encourage moral hazard if investors see the rescue measures as proof that the government will not allow these bonds to default.[106] Longer debt maturities also extend fiscal problems into the future rather than addressing the underlying issue of an imbalance between central and local tax receipts and expenditure burdens.[107] In addition to refinancing using regional government funds, local governments are also shifting debt burdens from weaker to stronger LGFVs, cutting expenditures, lowering investment, restructuring private debt, and selling assets to generate funds as LGFV bonds come due.[108] In heavily indebted Guizhou, a state-owned firm provided a guarantee for new bonds issued by a stronger LGFV to repay the debt of a weaker, unrelated LGFV.[109] Together, these actions have contributed to a compression in the risk premium paid on LGFV bonds compared with government bonds, signaling that bond traders have regained some confidence in regional governments to prevent defaults.[110] However, as underlying weaknesses in local government finances remain unresolved, this could be merely a reflection of investors' confidence in the government's unwillingness to allow LGFV defaults.[111]

LGFVs are also using creative accounting techniques to deleverage balance sheets. New accounting regulations promulgated by the Ministry of Finance now allow firms to monetize data as an intangible asset.‡[112] Since these regulations became effective on January 1, 2024, some LGFVs have classified data collected

*China's central government maintains tight control over local government debt. In highly indebted regions, only borrowing used to fund projects approved by the State Council or for key development areas like affordable housing is permitted. Local governments are also required to maintain balanced budgets, while LGFVs are not, which led to the rapid increase in LGFV debt. Helen X. H. Bao, Ziyou Wang, and Robert Liangqi Wu, "Understanding Local Government Debt Financing of Infrastructure Projects in China: Evidence Based on Accounting Data from Local Government Financing Vehicles," *Land Use Policy* 136 (2024): 1–17; *Reuters*, "Exclusive: China's Cabinet Curbs Debt Growth in 12 'High Risk' Regions—Sources," October 25, 2023.

†The refinanced bonds also come with new restrictions on use. Proceeds can only be used to repay principal on outstanding debt or to fund any of the so-called "three major projects," which refer to affordable housing, urban village renovation, and dual-use public facilities that can be used for everyday and emergency purposes. They cannot be used to make interest payments. Cheng Siwei et al., "In Depth: Local Governments Struggle to Tackle Mountain of Hidden Debt," *Caixin Global*, March 20, 2024.

‡Firms in the United States also monetize the data they collect, for example by tracking internet browsing history and selling the data to advertisers. U.S. firms are able to use this data as loan collateral by engaging a third-party expert to perform a valuation on the data. However, even in an industry worth billions, firms and lenders struggle to arrive at accurate valuations for their data due to a lack of publicly available information on comparable transactions. In addition, the developed market for personal data in the United States has sparked widespread data privacy concerns. Brian X. Chen, "The Battle for Digital Privacy Is Reshaping the Internet," *New York Times*, June 23, 2023; Douglas B. Laney, "Leveraging Data as Collateral Starts with Knowing Its True Value," *Forbes*, December 23, 2022.

through business operations as a balance sheet asset, including data on public transportation and utilities, with some data already serving as collateral for new loans.[113] Chinese regulators have been working on guidelines for how to value and recognize data on financial statements, but the value of these datasets and the degree to which they can be monetized are difficult to determine.[114] Although the total amount of debt collateralized by data is thus far small, the use of data of uncertain value as collateral shows how desperate LGFVs are to stabilize balance sheets and take out new debt.[115]

New national security laws may threaten the independence of international credit agencies—which have identified the rising debt problems in China—and make it difficult to judge the effectiveness of ongoing property sector reforms. In December 2023, Moody's Ratings changed its outlook of China's A1 credit rating from stable to negative, citing the increasing likelihood that the central government would need to provide financial support for local and regional governments and SOEs due in part to ongoing property sector weakness.[116] In May 2024, Moody's reaffirmed its A1 rating with a negative outlook for China and added that weak consumer and business sentiment continues to weigh on China's economic outlook.*[117] While the ratings action is unlikely to impact China's finances directly, the negative outlook underscores the difficulties China's economy is facing and may impact investor sentiment.†[118]

In response to ratings actions, Chinese state-sponsored media argue that international ratings agencies misunderstand China's economy and that their models are unsuitable for emerging economies in general.[119] By labeling the ratings actions as "a deliberate attempt to undermine … confidence" in China's economy, Chinese media highlighted the risks for corporations when their objective assessments contradict CCP policy edicts.[120] Prior to the release of its revised credit opinion, Moody's reportedly advised China-based staff to work from home, a possible precaution against a negative reaction from Beijing, which in the past has included corporate raids and detaining local employees.‡[121] Under tighter national security laws affecting international due diligence firms, domestic investors may be directed to rely more on China's domestic ratings agencies, which were the subject of intense criticism after they failed to identify deficiencies in property developers' financials.[122]

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*Fitch Ratings also changed its outlook on China's sovereign credit rating to negative in April 2024 and maintained its A+ rating, while S&P Global Ratings, the third-largest global credit ratings agency, maintained its assigned stable outlook. *Reuters*, "Fitch Cuts China's Ratings Outlook on Growth Risks," April 10, 2024; *Reuters*, "S&P: No Changes to China Credit Rating, Outlook," December 5, 2023.

†For more on how the CCP considers economic data and public perception of the economy matters of national security, see U.S.-China Economic and Security Review Commission, Chapter 1, Section 1, "U.S.-China Bilateral and China's External Economic and Trade Relations," in *2023 Annual Report to Congress*, November 2023, 55–56.

‡In 2023, Chinese security officials raided three multinational corporate advisory firms, exacerbating tensions within the international business community. For more on China's crackdown on international due diligence and corporate advisory firms, see "Foreign Multinational Companies Place Lower Priority on Investment in China" later in this chapter.

Lukewarm Policy Support for Alternative Growth Drivers

Chinese Consumption Data Are Contentious

Consumption trends in China are difficult to track due to discrepancies in data. There is reason to suspect that consumption's share of GDP outpaces official Chinese statistics. Some household income earned by wealthy individuals and the benefits of home ownership are likely underreported, as are transfers from the Chinese state to households in the form of education, healthcare, cultural amenities, and food.[123] Some have argued that after properly including these social transfers, household consumption increased its share of GDP by 6 percentage points from 2012 to 2019.[124] However, the growth rate of consumption has likely been overstated in more recent years. In 2022 and 2023, China's National Bureau of Statistics reported that consumption contributions to GDP growth were 0.4 percentage points and 4.3 percentage points, respectively.[125] Analysis by Rhodium Group estimates that the reality was closer to -0.5 percentage points and 2.0 percentage points, respectively, based on a variety of alternative data points.[126] In 2022, retail sales declined, Zero-COVID policies prevented consumers from spending money, household deposits rose, and consumer confidence fell, all factors that would contribute to lower consumption.[127] Similarly, in 2023, households paid down their debt by 13 percent and retail sales growth was weak.[128] Data on retail sales, sometimes used as a proxy for official consumption data, present their own problems. First, retail sales data include some purchases by government agencies, schools, and the military.[129] Second, consumption of services, a growing portion of consumer expenditures, is not captured by retail data.[130] Third, and perhaps most importantly, Chinese statistical authorities have in recent years retroactively amended retail sales data, lowering the base of comparison to present rosier annual growth numbers.[131] Adjustments made to 2019 data were on the scale of tens of billions of dollars.[132] Ongoing revisions to retail sales data, albeit on a smaller scale, make tracking China's consumption trends difficult.[133]

China remains reliant on manufacturing, exports, and the declining property sector because household consumption has not increased as a share of China's GDP.[134] As China's middle class is hit by deteriorating wealth from the property market downturn and China's older generations save for retirement, there are few segments of society left that can drive consumption growth. Key measures of consumption and consumer confidence continue to indicate weakness compared with pre-COVID trends. Stimulus initiatives announced in mid-2023, including a trade-in program for used cars, home renovation programs promoting energy efficiency, and lower prices at tourism locations, have been small in scope and not as effective as hoped.[135] In 2019, year-over-year growth in monthly retail sales of consumer goods was consistently over 7 percent; so far in 2024, the highest monthly figure has been 3.7 percent.[136] Consumption's contribution to GDP growth was lower in the first quar-

ter of 2024 than it was in the last three quarters of 2023 and—excluding the period of the COVID-19 pandemic—has remained in the same range since 2015.[137] Chinese consumers continue to spend less than their U.S. counterparts, driven by a combination of factors, including lower household income, poor domestic investment options, and a weak social safety net.[138] China's consumer confidence index has remained below the 100 level (above which China's consumers would be considered more confident than not) since April 2022.[139] Results from the annual "618" shopping festival exemplified weak consumer sentiment as aggregate e-commerce sales results from the event declined year-over-year for the first time.[140] Although the total number of trips taken during China's 2024 Spring Festival holiday was higher compared with pre-COVID, calculations based on official data indicate that spending per individual trip fell.[141] Reports of falling expenditures for services like after-school music and sports activities demonstrate how far consumer confidence has deteriorated given conventional wisdom that parents were willing to spend more on their children, even if they chose not to spend money on themselves.*[142]

The Chinese government's incremental measures to stimulate consumer spending have failed to address structural impediments to higher consumption and are overshadowed by efforts to promote traditional drivers of growth. While Chinese policymakers have identified consumption growth as a policy priority, stimulus measures thus far have been insufficient to overcome structural impediments that sustain China's high savings rate.†[143] Stimulus efforts for consumer goods have been limited and are further constrained by the large portion of household spending that already goes to services like education,‡ particularly for lower-income families.[144] Because a large portion of family wealth is tied up in real estate, stabilizing the property market will be another key component of restoring consumer confidence.[145] China has been battling deflation, and the lack of direct demand-side stimulus from the government has exacerbated weak consumer sentiment.[146] Some analysts have argued that China's government should use fiscal policy to stimulate consumption, either through direct cash transfers or changes to tax policies and subsidies.[147] So far, the government has resisted calls from economists and investors to institute a cash-trans-

*According to Chinese economist and former deputy managing director of the International Monetary Fund Zhu Min, China's parents and grandparents are willing to spend more on their children before they attend university. However, once young adults become responsible for their own costs of living, including marriage and housing, spending drops off naturally, exacerbated by intense work schedules and a lack of enticing consumer products targeting their demographic. As a result, as China's birth rate has fallen, overall spending has fallen as well. China's birth rate has fallen from 21 births per 1,000 people in 1985 to just 6.4 births per 1,000 people in 2023. China's population declined for the first time in recent memory in 2022. Lin Qianbing, "Investigation: How Can We Give Consumers the Confidence to Spend? What Influence Does the Changing Real Estate Market Have?" (观察 | 如何让消费者有信心消费？房地产市场变迁有哪些影响?), *Paper*, June 26, 2024. Translation; Jacob Funk Kirkegaard, "China's Population Decline Is Getting Close to Irreversible," *Peterson Institute for International Economics*, January 18, 2024.

†Chinese consumers are largely barred from investing overseas as part of China's strict capital controls, while banks are constrained in what they can offer depositors in interest in part due to low lending rates. Noriyuki Doi, "China's Listed Banks See Interest Margins Fall below Warning Line," *Nikkei Asia*, May 2, 2024; *Bloomberg*, "China Scrutinizes Capital Flows as Online Brokers Pull Apps," May 16, 2023.

‡Even with access to government-funded education, private spending on education still makes up a significant portion of household spending. These expenses include extracurriculars, tutoring, books, food, and higher education. Dezhuang Hu et al., "The High Cost of Education in China," *Stanford Center on China's Economy and Institutions*, April 1, 2024.

fer-style stimulus program.*[148] Furthermore, because of China's high savings rate, policymakers may be limited in their ability to boost the economy through fiscal policy, as excess cash may merely be deposited into bank accounts or used to pay down outstanding debt.[149] Instead, government reforms have focused on stimulating supply—and manufacturing in particular. Signs from recent policy statements indicate that China intends to rely on production and exports as drivers of economic growth, with a continued dearth of support for consumer spending.†[150] (For more on China's production and export-led growth strategy, see Chapter 4, "Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws.")

Youth Unemployment

Successively larger classes of college graduates are entering a workforce prioritizing jobs they do not want and focusing on skills they do not have. Worsening employment rates nearly two years after the end of China's Zero-COVID measures suggest Chinese youth unemployment is not the result of a lagging recovery but rather a structural mismatch in labor force supply and demand. Official Chinese statistics indicate that the overall urban unemployment rate has improved, returning to pre-pandemic levels.[151] Nonetheless, Chinese youth unemployment‡ continues to worsen. When China entered COVID, its young college graduates, a demographic group that has increased in size by nearly 70 percent since 2012, were primarily employed in service industries, private enterprises, and the gig economy.[152] The share of youth seeking employment in construction or manufacturing was steadily decreasing.[153] As Chinese policymakers fought the pandemic with strict lockdowns, the services sector and its disproportionately younger employees were most harmed.[154] As a result, while China's overall unemployment rate quickly returned to its pre-pandemic average of around 5 percent, Chinese youth unemployment nearly doubled from an average of 10.9 percent in the first half of 2019 to 19.6 percent in the first half of 2023.§[155] In August 2023, as China's youth unemployment rate continued to rise, officials in Beijing temporarily stopped pub-

*Boosting consumption is a key component to the success of Xi's strategy of "dual circulation," which aims to rebalance China's growth away from exports in order to insulate the Chinese economy from external demand shocks and boost self-reliance. It also emphasizes supply chain diversification and investment in the production of higher-value-added products. For more on "dual circulation," see U.S.-China Economic and Security Review Commission, Chapter 1, Section 1, "The Chinese Commuist Party's Ambitions and Challenges at Its Centennial," in *2021 Annual Report to Congress*, November 2021, 38. China Power Team, "Will the Dual Circulation Strategy Enable China to Compete in a Post-Pandemic World?" *Center for Strategic and International Studies*, December 15, 2021.

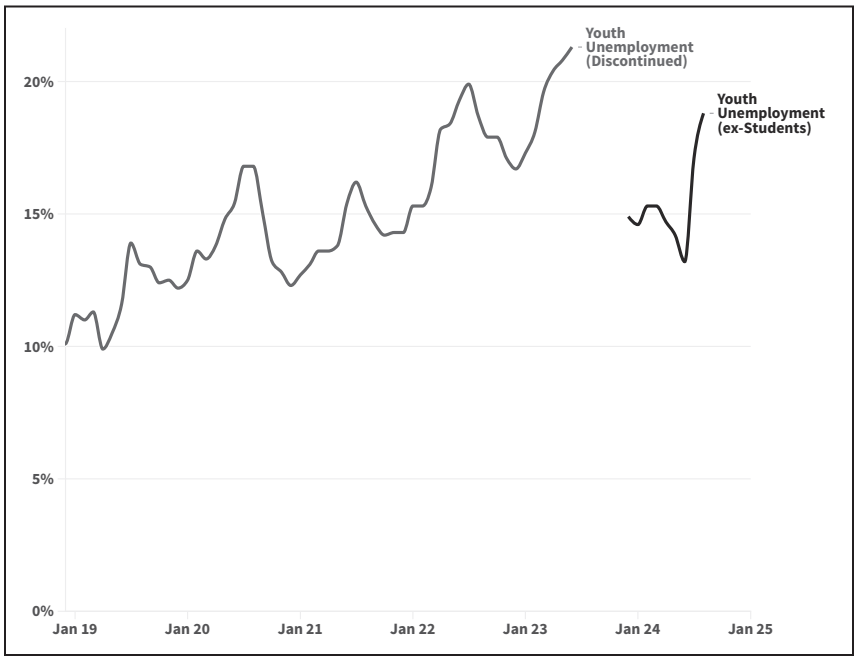
†In July 2024, the CCP held its twice-a-decade Third Plenum to discuss major milestones and set the direction of China's economic policy. The Third Plenum confirmed China would continue to focus on manufacturing and technology as drivers of growth rather than placing more emphasis on household consumption. Rebecca Feng, "China's Long Blueprint for Economy Falls Short on Details, Raising Concerns," *Wall Street Journal*, July 22, 2024; Jude Blanchette et al., "Third Plenum Hot Takes: Skepticism and Concern," *Center for Strategic and International Studies*, July 22, 2024.

‡Different countries use different definitions for youth unemployment, but China's new definition, revised in January 2024, covers workers aged 16–24 not including students.

§China's unemployment rate for young university graduates is likely even worse. While China does not release official statistics for the unemployment rate for 16- to 24-year-olds with a university education, analysts have tried to estimate it. Using China's census and its statistical yearbooks, the *Economist* estimated it to be 25.2 percent in 2020, which was 1.8 times the unemployment rate for all young people at the time. *Economist*, "Why So Many Chinese Graduates Cannot Find Work," April 18, 2024.

lishing the data series, citing a need to reassess its methodology.[156] In January 2024, China resumed publication and announced a 14.9 percent jobless rate for December 2023.[157] The drop was primarily because officials implemented a new method that excludes students seeking jobs.*[158] However, even with the new methodology, Chinese youth unemployment remains elevated. By August 2024, China's youth unemployment rate had increased by 3.9 percent since the start of the year to 18.81 percent.[159]

Figure 3: China's Youth Unemployment Rate, 2019–2024



Source: China's National Bureau of Statistics, "*Urban Unemployment Rate: Age 16–24* [2019–2024]," via Haver Analytics.

China's slow economic growth, tech and gig economy crackdowns, and faltering private sector have narrowed opportunities in the areas where most young, educated job hunters are seeking employment. To boost China's recovery from COVID, Chinese officials relied on targeted stimulus toward its property and manufacturing sectors.[160] However, such jobs have traditionally been filled by (internal) migrant workers and do not match the expectations of new college graduates.[161] As a result, despite elevated youth unemployment, Chinese officials are projecting a 30-million-person employment gap by 2025 for major manufacturing industries like automobiles.[162] In 2023, total employment at China's largest tech firms—Baidu, Alibaba, and Tencent—fell by nearly 25,000 jobs or 6.4 percent.[163] Chinese limitations on the pri-

*Notably, the United States, the United Kingdom, and many other countries include young people seeking jobs while studying when calculating their own rates. *Economist*, "Why So Many Chinese Graduates Cannot Find Work," April 18, 2024.

vate education industry have been even more damaging. Estimates suggest China's restrictions may have generated losses of three million jobs, or over 30 percent of those employed in the sector.[164] As China has recovered, private enterprises have also lagged far behind their state-owned counterparts.[165] Because these firms are responsible for around 80 percent of urban employment and 90 percent of new jobs, the employment implications have fallen hardest on China's youth.*[166] However, supply, particularly of college-educated youth, continues to grow. China's Ministry of Education projects that 11.8 million students will graduate by the end of 2024, a 2 percent year-over-year increase.[167]

China's elevated youth unemployment and pessimism toward the labor market are indicative of larger issues afflicting China's labor force. Surveys conducted by Martin K. Whyte, professor of international studies and sociology at Harvard University, and Shen Mingming, director of the Research Center of Contemporary China at Peking University, find that the Chinese populace increasingly views their economic system as arbitrary and unequal, assigning less responsibility to themselves and more to the Chinese system for achieving success. Between 2004 and 2014, those surveyed identified lack of ability, lack of effort, and low education as the main factors that explained poverty in China. In 2023, lack of effort and lack of ability plummeted to the fifth and sixth most prevalent explanations and were replaced by structural factors like "unequal opportunity" (ranked sixth in 2004 and first in 2023) and "unfair economic system" (ranked eighth in 2004 and third in 2023).[168] When asked in 2004 to react to the statement "Whether a person becomes rich or remains poor is their own responsibility," 49 percent of those surveyed agreed; in 2023, that portion fell to 27 percent.[169]

Hard data suggest that, like youth unemployment, this sentiment reflects a disconnect between expectations and the reality of China's job market. China's focus on industrial production has created a labor force in which educational attainment has outpaced an economy that is still predominantly based on manufacturing. While China's Ministry of Human Resources and Social Security estimates that almost half of all manufacturing roles will go unfilled by 2025, Chinese job hunters have focused their efforts elsewhere. For example, in 2023, a record 2.6 million people, many with a master's degree or even a doctorate, applied to take the national civil service exam to compete for only 37,100 entry-level positions.[170] This mismatch cuts across China's economy. Zhaopin.com, a major Chinese recruiting site, estimates that 90 percent of applications go to sectors that provide less than 50 percent of jobs.[171]

China's elderly are facing their own set of employment challenges. An inadequate social safety net means workers must stay in the labor force longer. In 2023, 94 million workers, or 12.8 percent of China's 734-million-person labor force, were older than

*Estimates suggest around 50–60 percent of urban employed people aged 16–24 worked for private firms during 2013–2020, which was around 20 percentage points higher than prime-age workers. This proportion was significantly higher among vocational college graduates, with nearly 70 percent employed in the private sector. Shuaizhang Feng et al., "A Closer Look at Causes of Youth Unemployment in the People's Republic of China," *ADB Briefs*, June 2023.

60—China's current statutory retirement age for men—up from 8.8 percent in 2020.[172] Chinese leadership is magnifying this trend, and in September 2024 it approved a plan to increase the statutory retirement age for the first time since 1951.*[173]

State Directives Weigh on Domestic Financial Markets

China's non-commercial financial sector has long helped the CCP achieve its economic and policy objectives. State-owned banks provide capital on advantageous terms to SOEs and conduct foreign exchange transactions to support the value of the RMB, while state-affiliated or licensed institutional investors under strong encouragement from the Party-state prop up the stock market via direct purchases. The failure of Chinese domestic markets to provide appealing investment opportunities for everyday people has contributed to both the development of unregulated and risky alternative investments and a high national savings rate. As economic growth has failed to recover since the COVID-19 pandemic, regulators and state-owned financial firms have taken steps to support financial markets, but both domestic and international investors remain skeptical.

Banks Reluctantly Support the Property Sector at the Expense of Private Enterprises

With existing real estate loans constituting a large portion of balance sheet assets and new directives extending credit to viable development projects, China's banks are often unable to deploy capital into more productive sectors of the economy. China's banking sector has significant exposure to the real estate sector, with almost 40 percent of loans related to property.[174] The banking sector's exposure to the property sector makes it likely that the percentage of non-performing assets will rise in 2025, according to forecasts from S&P Global.[175] After years of supporting an expansionary bubble in real estate, Chinese banks have pulled back from lending to the sector following a wave of policy changes and developer defaults; however, banks remain significantly exposed to property sector risks.

Banks have pulled back from lending more broadly as well. China's aggregate financing† shrank month-over-month in April 2024 for the first time since comparable data became available in 2017.[176] Multiple factors contributed to the decline, including less overall refinancing of local and regional government bonds under directives from the central government to deleverage as well as less activity in the shadow banking sector.[177] Household medium- and long-term loans, a proxy measure for mortgages, also showed the greatest contraction on record as fewer new mortgages were taken out than repaid.[178] Under pressure to stimulate economic growth, China's Ministry of Finance responded by announcing it would issue a total

*The retirement age will be raised from 60 to 63 years old for men. For women in white collar work, it will be raised from 55 to 58 years old. For women in blue collar work, it will be raised from 50 to 55 years old. The changes will come into effect in 2025 and be implemented over a 15-year period. Farah Master, "China Approves Plan to Raise Retirement Age from January 2025," *Reuters*, September 13, 2024.

†Aggregate financing is a broad measure of credit that includes government bond issuance, bank loans to firms and households, and other non-bank financing. *Bloomberg*, "China Credit Shrinks for First Time, Loan Growth Disappoints," May 11, 2024.

of $138 billion (RMB 1 trillion) in special long-term bonds, with the first tranche sold in May 2024.[179] Proceeds from the bonds will be used to fund long-term projects, including transforming excess capacity in the property market into public housing and supporting the development of strategic sectors.[180]

Chinese banks traditionally have granted more credit to SOEs, which carry an implicit guarantee from the government, while underserving small and medium-sized enterprises (SMEs).[181] The Chinese banking sector, led by large state-owned banks, is non-commercial in nature and ultimately backstopped by the government, making widespread bank failures highly unlikely.[182] However, slowing credit growth means banks are lending less to private sector borrowers, despite the private sector in recent years accounting for around 70 percent of jobs and 60 percent of GDP.[183] Other recent regulatory changes have harmed SMEs' access to bank credit by reducing access to a popular short-term financing tool in an effort to support regional bank stability.[184]

The PBOC has reintroduced a COVID-era program to provide relending facilities to banks that have extended credit to SMEs in the tech sector.[185] This follows past efforts by the central government to encourage lending to SMEs through grant programs and other incentives.[186] These programs often fail to spur lending by banks due to the confluence of limits on the interest rates banks can charge SMEs and implicit state guarantees for SOEs.[187]

Chinese policymakers are trying to mitigate systemic risk in the banking sector with a controlled deflation of the property bubble by ensuring viable projects still have access to bank credit while also instituting reforms to strengthen the banking sector. Chinese banks have been directed to lend to a "whitelist" of in-progress housing projects in attempts to reduce the stock of undelivered housing.[188] At the same time, recent regulatory tightening in the banking sector will require banks to recognize more assets as non-performing and set aside larger provisions for these non-performing assets as the government continues its efforts to rehabilitate the property sector. This is in part due to regulations effective by the end of 2025 that will require Chinese banks to recognize all exposure to a particular property developer as non-performing once the developer defaults on over 10 percent of outstanding credit owed to a bank.[189] As of January 2024, banks are also required to internally classify distressed developers as a higher credit risk.*[190]

Stock Market Slide Halted by Government Intervention

Official policy statements and actions by state-backed financial institutions have managed to slow the slide of Chinese stock market indices after years of deteriorating performance.† Major indicators of stock market performance in China rose overall in the first half of 2024 after the Chinese government

*Internal bank risk ratings determine the amount of capital banks need to set aside for a particular loan, thereby directly impacting banks' return on assets and indirectly affecting the ability to extend capital to other borrowers. Higher-risk ratings require greater capital provisions. Corporate Finance Institute, "Risk-Weighted Assets."

†China's stock market fails to reflect macroeconomic fundamentals. From 2007 to 2023, China's GDP grew from $3.6 trillion to $17.8 trillion. Over the same time period, the Shanghai Composite, a stock market index of all companies traded on the largest stock exchange in China,

stepped in to halt automated trading and directed state-owned firms to buy shares. Under overall poor conditions in the stock market and ongoing regulatory scrutiny, Chinese companies withdrew plans for domestic initial public offerings (IPOs), an ongoing trend from the prior year that has accelerated so far in 2024.[191] Beijing has shown some awareness of the challenges. Beijing replaced the chair of the China Securities Regulatory Commission (CSRC), installing Wu Qing, a seasoned risk executive known as the "broker butcher" for ordering the closure of a quarter of China's securities dealers during his last tenure as head of the CSRC.[192] Market participants also suspect that units of China's sovereign wealth fund, pension funds, insurers, and other state-backed asset management companies have been active in purchasing large volumes of exchange-traded funds (ETFs) in a directed and collective attempt to boost the performance of the stock market.*[193] At the same time, regulators have instituted stricter restrictions on types of trading seen as contributing to volatility and downward pressure on stock prices, including short selling and high-frequency trading by domestic hedge funds and directives to avoid purchases of risky derivatives.[194] Some interventions were direct, with high-frequency trading firms reporting instances of their internet access being suspended and borrowed shares being recalled.[195] While these actions were effective in stemming the fall of Chinese stock indices, they indicate that the government intends to maintain tight control over trading activity rather than encourage more market-driven trading.

More generally, the CCP has clearly articulated its vision for the country's financial sector to subdue profit-seeking behavior in favor of Party ideals. The Central Financial Commission and the Central Financial Work Committee have renewed calls to build a "socialist financial powerhouse" and enact "strict and tough supervision."[196] State conferences and newspapers have promoted a similar ideologically driven market that puts social responsibilities and serving the real economy† above the pursuit of pure profits.[197] The changes extend to individuals in the industry, with employees of domestic financial firms impacted by salary cuts and bonus clawbacks pressured to adhere closely to Party ideology, such as avoiding extravagant displays of wealth.[198]

Simultaneously, Chinese stock markets have become increasingly dominated by state-owned companies. From June 2021 to June 2024, SOEs' share of aggregate market capitalization of China's top 100 listed firms grew from 31.2 percent to 54 percent.‡[199] Over that period, valuations for China's largest non-public

has remained flat. World Bank, "*GDP (Current US$ - China)* [2007–2013]"; Yahoo Finance, "SSE Composite Index [7/1997–8/2024]."

*Similar buying behavior from what is known as China's "national team" could be seen in past periods of poor stock market performance, with large volumes of investments often flowing suddenly into Chinese ETFs. Weilun Soon and Rebecca Feng, "How China Tried to Fix the Stock Market—and Broke the Quants," *Wall Street Journal*, March 13, 2024.

†According to Xi, the real economy includes sectors like manufacturing as well as scientific and technological innovation.

‡Analysts at the Peterson Institute for International Economics define SOEs as companies in which the Chinese state holds 50 percent or more equity ownership and non-public enterprises (NPEs) as those in which the Chinese state holds less than 10 percent equity ownership. They also introduce a third category, mixed-ownership enterprises (MOEs), those in which the Chinese state holds an equity ownership stake between 10 and 50 percent. Tianlei Huang and Nicolas Véron, "The Private Sector Advances in China: The Evolving Ownership Structures of the Largest Companies in the Xi Jinping Era," *Peterson Institute for International Economics*, March 2022, 10.

enterprises have plummeted, while those of SOEs have risen. In June 2021, the market cap of non-public enterprises within China's top 100 listed firms was $4.7 trillion.[200] By June 2024, it had fallen by more than half to $2 trillion.[201] Conversely, over the same period, Chinese SOEs' market cap within China's top 100 listed firms grew from $2.7 trillion to $3.2 trillion.[202]

Against this backdrop, Beijing continued to pursue a number of financial market reforms in 2024 to promote stability and investor confidence in capital markets. High-quality development of capital markets has been a key theme at annual conferences and in regulatory releases. In April 2024, the State Council released a document outlining nine directives that would strengthen supervision, prevent risks, and support the development of China's capital markets.[203] The policies would encourage the availability of a wider array of investment products, including ETFs, while cracking down on market manipulation by financial intermediaries and other actions that violate the law.[204]

In September 2024, Chinese financial authorities introduced additional stimulus measures including interest rate cuts, lower reserve requirements for banks, and support for the property and stock markets.[205] The market reacted positively to the news, with a broad index for the Chinese stock market rising over three percent in one day.[206] Beyond this temporary surge, analysts questioned whether the measures would be sufficient to reverse China's deflationary spiral and achieve the stated 5 percent growth target.[207]

Ongoing RMB Currency Intervention *

In recent years, China's central bank has continued to orchestrate foreign exchange (FX) market interventions that support the value of the Chinese RMB amid market pressures that would otherwise weaken it.† The PBOC has soft-pegged the RMB within a set trading band against the dollar since 2005 (notably the value of the RMB's value continues to fluctuate against a basket of currencies).[208]

As the U.S. Federal Reserve has kept interest rates higher to combat persistent U.S. domestic inflation, the PBOC has resist-

*The Omnibus Trade and Competitiveness Act of 1988, 22 U.S.C. §5304(b) requires periodic reporting by the U.S. Department of the Treasury on activities relating to a narrowly defined concept of currency manipulation. From August 2019 to January 2020, the U.S. Department of the Treasury labeled China a currency manipulator under that statute, which requires, among other things, that China's currency manipulation be "for purposes of preventing effective balance of payments adjustments or gaining unfair competitive advantage in international trade." While the Treasury has removed this designation, China does still intervene persistently in currency markets to manage the value of the RMB relative to the U.S. dollar. Alan Rappeport, "U.S. Says China Is No Longer a Currency Manipulator," *New York Times*, January 13, 2020; U.S. Department of the Treasury, *Treasury Designates China as a Currency Manipulator*, August 5, 2019.

†China's preference for a weaker RMB in the early 21st century was driven by its reliance on exports for growth. As China's trade surplus with the United States grew, China prevented its currency from appreciating by intervening in currency markets. This led to vocal pushback from its international trading partners whose own goods were relatively more expensive as a result. Although China still maintains a trade surplus with the United States, this dynamic has since reversed. China now intervenes to prevent the devaluation of the RMB in the face of pressures including weaker economic growth, volatile financial markets, and high U.S. interest rates. Chris Anstey, "The Promise and Peril of China's Strong Yuan Policy," *Bloomberg*, February 3, 2024; Wayne M. Morrison and Marc Labonte, "China's Currency Policy: An Analysis of the Economic Issues," *Congressional Research Service* CRS RS 21625, July 22, 2013.

Ongoing RMB Currency Intervention—*Continued*

ed large cuts to its "benchmark" loan prime rate* to avoid exacerbating depreciation pressure on the RMB.[209] Since July 2023, Chinese officials have regularly set the daily RMB fixing—or reference rate around which the currency is allowed to trade—at a level significantly stronger than market consensus.† Markets have reacted by maintaining exchange rates close to the weak end of the fixed trading band for prolonged periods, and the RMB has experienced depreciation of around 2 percent against the dollar this year.[210] Still, China has favored stability and is reluctant to allow a rapid shift in the exchange rate. Analysts suggest the PBOC is concerned that currency weakness will exacerbate negative sentiment among domestic and foreign investors and spur capital flight.[211] Additionally, at the start of 2024, Xi emphasized "a strong currency" as one of his top priorities to support his plans to strengthen China's status as a financial powerhouse.[212] Xi's speech marked the first time in more than two decades that a Chinese leader used this annual speech at the Central Party School in Beijing to discuss finance, and it has likely encouraged the PBOC to continue to maintain a strong exchange rate.[213]

Explicit steps by Chinese policymakers to support the RMB include verbal guidance to speculators and investors when they view trading activity as a threat to the lower bound of the fixed trading band, the tightening of offshore RMB liquidity, and the lowering of reserve requirements on foreign currency deposits.[214] Despite these efforts, in the first half of 2024, the RMB remained unusually stable close to the weaker end of the RMB trading band. Historically, this has meant the PBOC is maintaining the band through the sale of FX.[215] However, the PBOC's foreign currency balance sheet has moved slightly in the opposite direction, suggesting the bank has not used its own funds to keep the RMB inside the weak edge of the band.[216] This contradiction has led some analysts to suggest the PBOC has instead turned to state-owned banks to actively manage FX markets and support the RMB against further depreciation.[217]

U.S.-China Bilateral Commercial Relations

Bilateral Trade Slows

Total U.S.-China trade continued to be stagnant through the first eight months of 2024 amidst weakening economic conditions, price effects, increased geopolitical tensions, and a rising trend of supply chain diversification. Although U.S. official trade statistics capture only a portion of trade with China, the data indicate a downward shift in the direct flow of goods (see

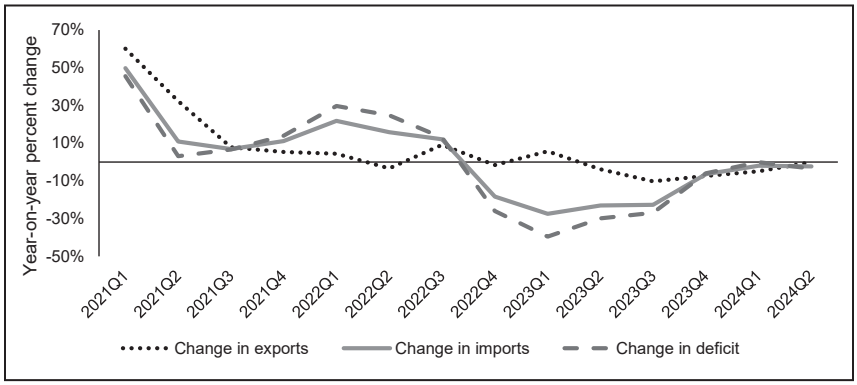
*After the U.S. Federal Reserve cut interest rates by 0.5 percentage points in September 2024, the PBOC also lowered its benchmark interest rate from 1.7 percent to 1.5 percent. Christian Shepherd and Anna Fifield, "China Moves to Boost Ailing Economy with Property, Stimulus Measures," *Washington Post*, September 24, 2024.

†Any reference rate that is significantly stronger or weaker than the market expects is considered a signal from the PBOC on how it wants the currency to move. Allianz Global Investors, "Currency Up, Equities Up," November 24, 2023.

Figure 4). U.S. imports and exports of goods with China reached just $575 billion in 2023, a decrease of 16.8 percent from the year earlier.*[218] While the slowdown continued early in 2024, by August total U.S.-China trade for the year to date was virtually unchanged from the same period in 2023.[219] Weakening Chinese demand for most U.S. exports and stagnant U.S. imports caused the U.S.-China trade deficit to increase slightly.[220] In the first eight months of 2024, the bilateral trade deficit rose to $186 billion, a 2.4 percent increase over the same period in 2023.[221]

The U.S. trade statistics substantially understate the trade deficit with China as tens of billions of dollars of small parcel imports that enter duty free under the de minimis exemption are not incorporated in official U.S. trade estimates.†[222] Trade statistics prepared by China's customs agency, which capture all exports to the United States including de minimis shipments, suggest the scale of mismeasurement in U.S. customs figures. China reported that it exported $506 billion in goods to the United States in 2023, $79 billion more than the United States recorded as imports.[223] (For more on distortions to U.S. trade data caused by tariff avoidance strategies including de minimis entry, see Chapter 4, "Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws.")

Figure 4: Change in Quarterly U.S. Bilateral Goods Trade with China, Q1 2021–Q2 2024



Source: U.S. Census Bureau, *Trade in Goods with China*.

Imports

Following a sharp decline in 2023, U.S. goods imports from China leveled off in the first eight months of 2024. According to U.S. data, in 2023, the United States imported $427 billion in goods from China, down by over 20 percent from 2022 and falling

*Trade data produced by China's customs agency, which better account for cross-border e-commerce trade than U.S. data, also point toward a fall in the goods trade. In Chinese data, goods exports and imports with the United States fell to $672 billion in 2023, down 11.5 percent from the year prior. China's General Administration of Customs, *Customs Statistics*, July 2024.

†The de minimis exemption, provided under Section 321 of the Tariff Act of 1930, provides duty-free treatment for shipments valued under $800 entering the U.S. market per person, per day. In fiscal year 2023, over one billion de minimis shipments crossed the U.S. border from all origin countries. U.S. Customs and Border Protection, *E-Commerce*.

to the second-lowest import level since 2012, surpassed only by the pandemic-induced slowdown in trade in 2020.[224] Eight months into 2024, U.S. imports from China amounted to $279 billion, increasing by 1.3 percent from 2023.[225] Softening U.S. consumer confidence in the first half of 2024 dragged on imports as growth in household spending slowed in response to concerns about inflation and poor consumer sentiment.[226] U.S. tariffs and bilateral tensions have also prompted some importers to reduce their dependence on Chinese imports and shift to alternative sourcing hubs, contributing to the continued weakness in direct imports from China (see "Supply Chain Diversification from China Is Occurring, but the Extent Remains Unclear" in this section).

In addition, price and exchange rate effects contributed to the decline in import value and relieved some pressure on U.S. inflation.[227] The price of imports from China fell 1.4 percent in August 2024 from a year earlier.*[228] This deflation in price largely reflects overproduction in China, with producers looking to shift a greater share of sales overseas amid weak domestic demand.[229] The price of fabricated metal products, the United States' fifth-largest import category with China, fell 2.1 percent in August 2024 from a year earlier.[230] RMB depreciation further depressed the value of imports from China, as a weaker RMB means Chinese goods are cheaper in dollar-equivalent terms.[231] Nonetheless, the volume of U.S. imports could strengthen into 2025 as consumers and businesses take advantage of reduced prices from China.†

Exports

Overall U.S. exports to China continued to slow in 2024 due in part to persistently weak Chinese consumption. Though U.S. exports of goods in 2023 remained elevated above pre-COVID levels, at $148 billion, the export volume shrunk 4.1 percent from 2022 levels as China's economy remained stagnant after ending its Zero-COVID policies.[232] In the year through August 2024, the flow of goods continued to fall, reflecting the ongoing sluggishness in China's domestic demand.[233] The United States sent $93 billion in goods to China in the first eight months of 2024, down 0.8 percent from the previous year.[234] U.S. exports were boosted by sales of advanced technology products,‡ which grew 33 percent in the year through August 2024, largely due to a resurgence in shipments of U.S. semiconductors and airplane parts, as discussed below.[235] However, export growth was weighed down in other sectors, including agriculture, amid Chinese polices aimed at diversifying away from U.S. products, notably soybeans.[236]

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*Accounting for price effects, the real value of U.S. imports from China increased by 3.4 percent in the year through August 2024 compared to a year earlier. U.S. Census Bureau, *Trade in Goods with China*; U.S. Bureau of Labor Statistics, "*Monthly Import Price Index by Origin for NAICS, All Industries, China, Not Seasonally Adjusted*," October 11, 2024.

†Data on container freight volume suggest this is already taking place. Between January and August 2024, containerized imports to U.S. seaports rose by 15.1 percent year-on-year in weight, despite the more modest 1.3 percent increase in value. This likely reflects an increase in low-value, high-weight products. For instance, China's exports of plastic products have surged in 2024. U.S. Census Bureau, *USA Trade Online*, July 2024; *Bloomberg*, "China's Plastics Boom Is Set to Create Another Trade Headache," July 1, 2024; Lori Ann LaRocco, "Imports from China to the U.S. Are Rising at the Fastest Rate since Last Fall," *CNBC*, April 10, 2024.

‡Advanced technology products are a broad range of high-technology goods, including semiconductors, biotechnology, aerospace, and nuclear technology products. U.S. Census Bureau, *Advanced Technology Product (ATP) Code Descriptions*.

U.S. Shipments of Semiconductors Rebound

U.S. exports to China of non-export-controlled semiconductors expanded at the start of 2024. To curb China's advancements in critical technology, the U.S. Department of Commerce implemented controls on U.S. exports of the most advanced computing chips and advanced semiconductor manufacturing equipment to China in October 2022 and expanded them in October 2023. The controls did not apply to "legacy semiconductors" or less advanced chips used in home appliances, automobiles, and many connected devices. Though exports of semiconductors fell 45.5 percent in 2023, in 2024 the flow of U.S. chips rose sharply.[237] Between January and August 2024, U.S. semiconductor companies exported $5.3 billion in chips to China, an increase of 69 percent from the same period in 2023 but still down from 2022 levels.[238] To comply with U.S. export restrictions, U.S. chip companies such as Intel and NVIDIA have developed AI chips for the China market that have lower performance capabilities.[239] Though these chips underperform relative to the leading-edge AI chips sold to other customers, some Chinese companies have turned to these tuned-down processors given the country's shortage of computing power.[240] The growth in U.S. chip exports at the start of 2024 likely also reflected an uptick in sales of processors to Chinese consumer electronics manufacturers, though this growth may have since slowed as U.S. authorities further restricted sales to Huawei. In May 2024, the Commerce Department revoked export licenses for Intel and Qualcomm that reportedly permitted them to sell smartphone and laptop chips to Huawei.*[241] (For more on the design of U.S. export control policy toward China, see Chapter 6, "Key Economic Strategies for Leveling the U.S.-China Playing Field.")

China's Aviation Sector Surges Demand for U.S. Components

A post-Zero-COVID rebound in Chinese domestic air travel boosted demand for U.S. planes and aviation components. U.S. exports of civilian aircraft, engines, equipment, and parts grew 65 percent in the first eight months of 2024 relative to the same period in 2023, reaching $7.7 billion.[242] Exports of these products reached their highest volume since the onset of the COVID-19 pandemic as air travel began to revive in China and are on track to exceed 2019 levels.[243] By August 2024, total air passenger traffic rose to 492 million trips, increasing 20 percent over the same period in 2023 and exceeding the pre-pandemic levels of 2019, according to data from the Civil Aviation Administration of (CAAC).†[244] The increased traffic led to higher demand for parts to maintain China's air fleet, boosting U.S. exports.[245] In addition, China's state-owned aerospace company Commercial Aircraft Corporation of China, Ltd.

*Just prior to Intel's license being revoked, Huawei launched a new laptop, the Mate X Pro, that ran on Intel's Core Ultra 9 processor, which is capable of running a large language model developed by Huawei. Yifan Yu, "Intel Profit Plunges 85% as AI Chip Sales Fall behind Nvidia and AMD," *Nikkei Asia*, August 2, 2024.

†Though domestic tourism spending stands out as one of the few positive drivers in China's otherwise sluggish consumer spending growth in 2024, travelers have nonetheless remained parsimonious compared to pre-pandemic years. During China's Labor Day holiday in May, spending per traveler had fallen by 11.5 percent compared to 2019. Sophie Yu and Casey Hall, "China May Day Holiday Spending Shows Mixed Picture on Post-COVID Recovery," *Reuters*, May 6, 2024; *Bloomberg*, "China Holiday Spending Rise Shows Consumption Recovery on Track," April 8, 2024.

(COMAC) is expanding production of its C919 narrow-body commercial airliner, which relies on components supplied by multiple U.S. aerospace companies (see textbox).[246]

China's Aviation Industry Remains Dependent on Foreign Suppliers

Despite China's efforts to become self-sufficient in aviation, it remains reliant on U.S. and European aerospace components. China has aimed to develop a domestic civil aviation industry since the 1970s.[247] More recently, in 2014, Xi called on COMAC to "independently develop and manufacture large passenger aircraft as soon as possible," and the Chinese government has since issued many policy documents like the CCP Central Committee and State Council's *Outline for Building a Powerful Transportation Country* that called for "raising the technological level of domestically produced aircraft and engines."[248] Despite these goals (and attempts to access foreign technology through joint ventures and cyberespionage), China has only produced two commercial jet models, and its aviation industry remains reliant on foreign suppliers.[249] For example, the engine used in the C919, COMAC's first "home-grown" narrow-body jet, is produced by a joint venture between U.S. GE Aviation and French Safran.[250] In 2016, COMAC, Chinese defense contractor Aviation Industry Corporation of China (AVIC), and the Beijing municipal government formed the Aero Engine Corporation of China (AECC) to domestically produce an engine for the C919, but that engine has yet to be approved by the CAAC.[251] Even if AECC's engine is approved, it will rely on components sourced from companies in Germany and the United Kingdom.[252] There are no plans to develop a domestic alternative to the GE engine used in COMAC's other commercial model, the ARJ21 regional jet.[253] A 2020 Center for Strategic and International Studies report found that in addition to engines, the C919 is reliant on U.S. and European companies for over 75 percent of its key components, with more recent research indicating components ranging from communications and flight control systems to tires continue to be imported.[254] China's exposure to U.S. and allied suppliers was clear when COMAC ran out of some parts and struggled to meet production targets after being placed on the U.S. Department of Defense's (DOD) Communist Chinese Military Companies list in 2021 (sanctions against COMAC were dropped ten months later when it was not included on the Non-SDN Chinese Military-Industrial Complex Companies List that replaced this DOD list); it was also evident when, in the same year, Canadian and U.S. denial of export licenses for the Pratt & Whitney PW150 engine led to the effective cancelation of China's MA700 aircraft program.[255]

China resumed importing Boeing aircraft after a three-year freeze, but the aerospace company continues to face scrutiny selling into the Chinese market. China suspended most orders and deliveries of Boeing aircraft in 2019 following two fatal crashes involving Boeing's 737 MAX 8, keeping the pause in place through most of

2023 even as other civil aviation bodies recertified the airframe. In December 2023, Chinese regulators approved Boeing's first delivery of a 787 Dreamliner since 2019, though shipments were disrupted shortly thereafter.[256] Chinese regulators again paused approvals between May and July 2024, ostensibly for a regulatory inspection of a component, before permitting further deliveries.[257] The pause coincided with Chinese sanctions issued on May 19, 2024—after the inauguration of Taiwan's President Lai Ching-te—against Boeing's defense unit along with two other U.S. defense firms over arms sales to Taiwan.*[258] Though the sanctions placed no direct restrictions on Boeing's civil aviation unit, China's coercion points toward its willingness to leverage its commercial relationship with the United States as it pursues its geopolitical objectives.

China Continues to Reduce Purchases of U.S. Agriculture Goods

U.S. exports of agriculture products to China fell in 2024 as China switched to lower-cost, non-U.S. sources. Though agricultural products continue to be one of the United States' leading exports to China, U.S. agriculture exports fell 15 percent by value year-on-year in the year through August 2024, totaling $13.7 billion.[259] This decline in value partially reflects falling food prices in global commodity markets due to large harvests and weaker demand; the volume of U.S. exports to China dropped at the slower rate of 5 percent by weight.[260] The drop also reflects China's ongoing shift toward alternative suppliers, driven by a desire to reduce dependence on the United States and strengthen its food security. Since 2018, when China responded to U.S. tariffs on Chinese goods with retaliatory duties on many agriculture products and other goods, U.S. producers have lost ground in China's import market.[261] The United States' share of China's agriculture imports by value fell from 19 percent in 2017 to 13 percent in 2023.[262] Much of the U.S. share was taken over by Brazil.[263] Brazil is now China's top overseas supplier for vital crops, including soybeans, which are used as animal feed or converted into edible oils.[264] In the year through August 2024, Brazil supplied 74 percent of China's soybean imports, exporting 3.6 times more than the United States.[265] Nonetheless, the Party-state continues to view China's dependence on imported soybeans as a significant challenge for ensuring China's food security. (For more on Beijing's prioritization of food security, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.")

China Uses Its Leverage over Critical Minerals to Retaliate against U.S. Economic Statecraft

China is using its dominance over key minerals to selectively ramp up pressure on supply chains critical to U.S. national security. On July 3, 2023, China announced new export controls on germanium and gallium in response to U.S. technology export controls.[266] It further restricted the export of rare earth processing technologies in December 2023.[267] Nearly half of the world's rare earths resources are mined outside of China, but China current-

*China's regulatory review of the Boeing 737 Max 8 flight recorder and suspension of deliveries was first reported by Reuters on May 22, 2024. David Shepardson and Allison Lampert, "Boeing Deliveries to China Delayed by State Regulator Review, Source Says," *Reuters*, May 22, 2024.

ly performs almost 90 percent of processing across all rare earths, including 60 percent of germanium and 90 percent of gallium as of 2022.*[268] In August 2024, China announced additional controls on antimony, an element that is critical to a range of applications in the electronics and defense industries.†[269]

Germanium and gallium are both vital minerals for the production of an array of goods, notably semiconductors, solar panels, and EVs.[270] These minerals are primarily recovered as a byproduct of processing bauxite (aluminum) and zinc ores (germanium is also a byproduct of producing coal).[271] The United States has alternative domestic sources of germanium, and the U.S. National Defense Stockpile maintains a germanium reserve, so the controls have primarily impacted the United States' gallium supply.[272] The germanium stockpile is also being supplemented with a DOD program to recycle the mineral, further alleviating constraints.[273]

There is currently no strategic stockpile of gallium, and the United States does not actively produce the mineral. Instead, the United States has been forced to switch to alternative suppliers that are still able to source the mineral from China.[274] Canada, Germany, and Japan have continued to receive some shipments of the mineral, but global supply is tight overall.[275] In the first eight months of 2024, China cut exports by about one-fifth from its 2023 gallium and germanium exports over the same time period.[276] While prices for germanium have risen, they have been overshadowed by gallium's prices, which have more than doubled since Beijing's export controls.[277] If China further restricts exports of these minerals, it could create downstream bottlenecks in global semiconductor production. Notably, Taiwan chip companies, which are integral to semiconductor supply chains, mainly rely on refined gallium and germanium products produced in Japan and Germany, and further controls on these two countries' access to Chinese raw materials could have a cascading effect.[278]

Though the consequences of China's impending controls on antimony are not yet clear, the U.S. defense industry may be able to continue sourcing from other antimony-producing countries. Antimony is used by the defense industry to produce armor-piercing ammunition, night vision goggles, infrared sensors, bullets, and precision optics, and by the electronics industry for semiconductors, cables, and batteries.[279] China does not dominate antimony production to the same extent as some other critical minerals. China is the United States' largest supplier and accounts for 63 percent of U.S. antimony imports.[280] In 2023, China accounted for 48 percent of global production, but rising domestic demand meant most output went to domestic users and the country only accounted for 17.4 percent of global exports.[281] The United States does not mine any antimony domestically and is authorized to stockpile a limited 1,100 tons compared to the 22,000 tons consumed in 2023.[282] In the month following China's August 2024 announcement of the controls, the price of antimony climbed by more than 5 percent to $25,000 per ton, more

*For more on China's strategy to dominate critical minerals, see Chapter 3, "U.S.-China Competition in Emerging Technologies."

†China's export restrictions took effect on September 15, 2024. Gracelin Baskaran and Meredith Schwartz, "China's Antimony Export Restrictions: The Impact on U.S. National Security," *Center for Strategic and International Studies*, August 20, 2024.

than double its $12,000 price at the end of last year.[283] While a loss of Chinese supply will raise prices, U.S. defense and electronics manufacturers may be able to turn to several smaller producers—such as Belgium, India, and Bolivia—to meet demand.[284]

Supply Chain Diversification from China Is Occurring, but the Extent Remains Unclear

U.S. trade policy since 2017 has helped accelerate a shift in global supply chains away from China. Starting in July 2018, the United States implemented tariffs on roughly two-thirds of Chinese imports following the completion of a Section 301 investigation into Chinese policies related to technology transfer and intellectual property theft.[285] These duties raised the average U.S. tariff on Chinese imports to 19.3 percent at the end of 2020, compared to the 3 percent average for other countries.*[286] The U.S. International Trade Commission estimates that the Section 301 trade action caused U.S. imports to fall by 13 percent between 2018 and 2021 on average in sectors impacted by the tariffs.[287] Alongside other trade actions, these duties contributed to a decline in China's share of U.S. imports, which fell to 13.1 percent of total U.S. imports in the year through August 2024 from 20.9 percent in 2017.[288] In May 2024, the United States announced it would retain existing China Section 301 tariffs and expand them to cover key technology subsectors, including 100 percent tariffs on EVs and 50 percent tariffs on solar cells.[289] (For more on the design and impact of U.S. trade policy toward China, see Chapter 6, "Key Economic Strategies for Leveling the U.S.-China Playing Field.")

An increasing share of U.S. imports came from third countries. As analyzed in a number of recent studies, other foreign suppliers stepped in to supply products where China's share of the U.S. import market declined rapidly.[290] Mexico and Vietnam both increased their shares of U.S. imports by roughly 2 percent—more than any other economy.[291] Between January and August 2024, shipments from Mexico and Vietnam accounted for 15.7 percent and 4 percent of all U.S. imports, respectively.[292] Mexico ostensibly overtook China as the largest supplier to the United States for the first time in 20 years, although this gap may be overstated due to the unaccounted data on U.S. de minimis imports from China.†[293]

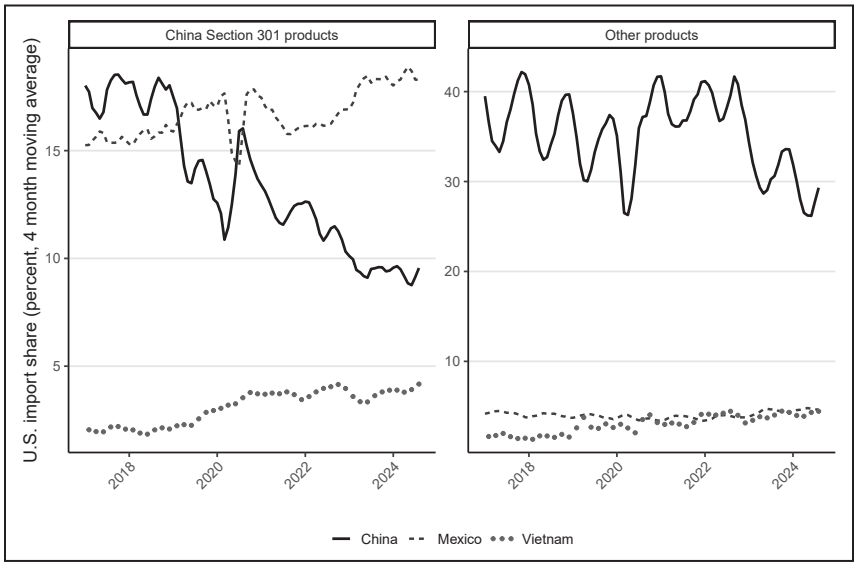
These shifts appear to be largely driven by U.S. trade measures. Mexico and Vietnam ramped up exports to the United States of products impacted by China Section 301 duties, while their exports to the United States of other products not covered by those duties remained steady (see Figure 5). By the end of 2023, Mexico and Vietnam were the source of 21.8 percent of the United States' total imports of products covered by Section 301 duties, up from 17.8

*When including anti-dumping duties imposed by the U.S. Commerce Department, the trade-weighted average tariff rises to 26.7 percent at the end of 2020. Chad P. Bown, "U.S.-China Trade War Tariffs: An Up-to-Date Chart," *Peterson Institute for International Economics*, April 6, 2023; Chad P. Bown, "The U.S.-China Trade War and Phase One Agreement," *Journal of Policy Modeling* 43:4 (2021): 827.

†Between January and July 2024, Mexico exported $291 billion in goods through formal customs channels, compared to $239 billion in imports from China. U.S. Customs and Border Protection estimates that between October 2023 and June 2024, an additional $47.8 billion in imports entered under de minimis from all source countries, the majority of which come from China. U.S. Census Bureau, *USA Trade Online*, October 11, 2024; U.S. Customs and Border Protection, *E-Commerce*, August 22, 2024.

percent at the end of 2017.[294] The Office of the U.S. Trade Representative assesses that imports to the United States of products from China subject to higher Section 301 duties saw more significant declines overall, reflecting how tariffs played a key role in reshaping U.S. trade patterns.[295] However, as Figure 5 shows, over the past two years, imports to the United States of products from China not subject to additional duties have also begun to slow, indicating that a broader diversification of trade away from China may be emerging.*[296]

Figure 5: Mexico and Vietnam Take U.S. Import Share from China within Products Subject to Section 301 Duties, 2017–2024



Note: China Section 301 products refer to the group of products covered by China Section 301 tariff lines. A "China Section 301 product" from Mexico or Vietnam is one that would be subject to a Section 301 duty if it came from China instead.
Source: Various.[297]

Though a portion of U.S.-China trade shifted to other sources, the full reduction in U.S. dependence on Chinese production remains unclear given the presence of Chinese inputs embedded in manufacturing in these economies. Edmund Malesky, professor of political economy and director of the Duke Center for International Development at Duke University, testified that the shift toward Vietnam reflects three broad patterns: "1) the continuation of pre-tariff shifts in production caused by increasing Chinese wages and growing Vietnamese productivity; 2) immediate post-tariff increases in production by existing manufacturers in Vietnam; and 3) post-tariff manufacturing investment and exporting by multinational companies of multiple origins."[298] A group of economists found that countries that increased exports

*Consumer products make up the bulk of U.S. imports from China that are not subject to Section 301 duties. For more on the risk to U.S. households from China's role in consumer product manufacturing, see Chapter 4, "Unsafe and Unregulated Chinese Consumer Products: Challenges in Enforcing Import Regulations and Laws."

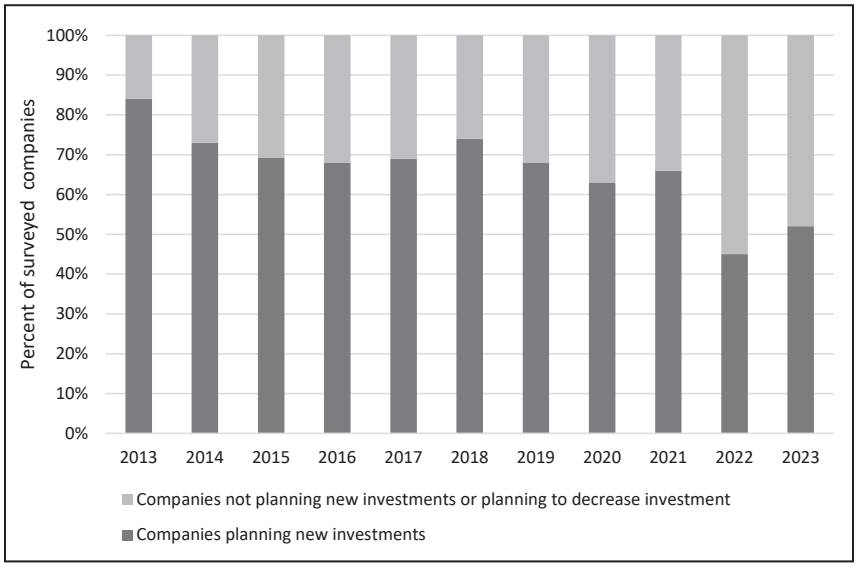
to the United States after 2017 appeared to rely on inputs from China to scale production.[299] Another study found the increase in Mexico's exports to the United States since 2018 was mainly driven by companies with supply chains linked to China and the rest of Asia.*[300] In quantitative terms, China's share of value added embedded in third country exports has increased. In the case of Vietnam's manufacturing sector, intermediate inputs sourced from China accounted for 18.5 percent of the value added in its exports in 2020, up from 15.2 percent in 2017.[301] China's value-added share in Mexico's manufacturing exports rose from 8.1 percent to 9.5 percent over the same period.[302] In addition, some of China's exports likely continue to enter the U.S. via illegal transshipment through a third market. (For more on customs fraud and other illegal trade activities, see Chapter 4, "Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws.")

Foreign Multinational Companies Place Lower Priority on Investment in China

New foreign direct investment (FDI) in China fell as U.S. and other foreign companies slowed expansion inside China. According to China's Ministry of Commerce, new foreign investment actually utilized in 2023 amounted to $151 billion (RMB 1.1 trillion), down eight percent from the previous year.[303] New FDI continued to slow in 2024, falling 31.5 percent year-on-year in the first eight months of 2024.[304] The sharp decline is consistent with falling interest by U.S. companies. According to an American Chamber of Commerce in China (AmCham China) survey conducted at the end of 2023, just over half of U.S. firms in China planned to expand their investments inside China. Though this number increased slightly over the previous year's 45 percent level, it remains the second-lowest surveyed result in at least a decade (see Figure 6).[305] Businesses cited uncertainties in the U.S.-China economic relationship and concerns about an uncertain Chinese policy environment as their top reasons for avoiding investment expansions.[306] Other foreign multinationals also appeared to slow expansion inside China. According to 2023 survey data collected by the Japan External Trade Organization, less than 30 percent of Japanese businesses are planning to expand inside China, the lowest level in the survey's history.[307]

*These authors used companies' involvement in the Mexican government's maquiladora program to identify participation in global value chains. Companies registered under the maquiladora program can import raw materials and equipment without paying taxes or duties, provided the inputs are used in the production of exports.

Figure 6: Surveyed Investment Plans of U.S. Multinational Enterprises in China, 2013–2023



Note: Each year, AmCham China surveyed leaders of U.S. businesses operating in China about their investment plans for the following year.

Source: American Chamber of Commerce in China, "2024 China Business Climate Survey Report," March 2024, 42; American Chamber of Commerce in China, "2020 China Business Climate Survey Report," March 2020, 33.

China's high-profile efforts to boost inbound investment largely failed to mitigate foreign businesses' concerns about operating in China. In 2023, China's Ministry of Commerce organized a series of events to attract foreign businesses.[308] In March 2024, General Secretary Xi hosted more than a dozen U.S. CEOs for a meeting in Beijing.*[309] The meeting was widely publicized by Chinese state media as China pushed a narrative that it is receptive to foreign business.[310] Xi conveyed to the group that China is committed to reforming and opening up its economy. He called for closer economic ties with the United States.[311] In March 2024, China's State Council also released a 24-point "action plan" that promised various measures to facilitate investment, including a pledge to remove restrictions on additional sectors currently closed to foreign investment, easing restrictions on cross-border data flows, and easing visa requirements for travel.†[312] Many of these pledges reflect previous commitments that China has repeatedly failed to fulfill. For instance, the action plan includes pledges to eliminate discrimination against foreign businesses in government procurement, echo-

*Numerous analysts and media outlets observed that China carefully managed the delegation and its members. Notably, the group of U.S. CEOs was entirely male. Laura He and Wayne Chang, "China's Xi Meets American CEOs to Boost Confidence in World's Second Largest Economy," *CNN*, March 27, 2024.

†The document pledges to extend the validity of some work visas to two years. China has also eased visa requirements for visiting China as a tourist. Since China reopened its border to tourism in early 2023, China has expanded its visa-free entry program, permitting more tourists to travel to China without first applying for a visa with a Chinese embassy. *Bloomberg*, "China Releases Action Plan to Attract Foreign Investment," March 19, 2024; Deng Zhangyu, "Visa-Free Transit Extended to More Visitors," *China Daily*, November 18, 2023.

ing commitments made in China's 2001 WTO accession agreement that have yet to be fulfilled.*[313]

However, these attempts to attract foreign investment seemed incongruous with China's "anti-espionage" actions and a crackdown on foreign access to information Beijing views as state secrets but some argue is routine financial and economic data. In 2023, Chinese security officials raided the offices of the U.S. due diligence firm Mintz Group and the U.S. corporate advisory Bain & Co.[314] The Mintz Group was accused of conducting "foreign-related statistical investigations" and subjected to a $1.5 million fine by the Beijing Municipal Bureau of Statistics.[315] In February 2024, the bureau increased the fine to roughly $2.2 million.†[316] According to Reuters, Mintz was engaged in due diligence work that included assessing the supply chain presence of Xinjiang forced labor prior to its March 2023 police raid, and Chinese authorities had given due diligence firms warnings about conducting such investigations.‡[317]

U.S. corporate advisory firms have started to restrict their operations inside China following the raids. In November 2023, the U.S. polling and consulting group Gallup reportedly informed its clients that it was closing its offices in China, which mainly provided corporate governance and marketing consulting to Chinese companies.[318] In June 2024, Bain & Co.'s global head Christophe De Vusser announced that the company is refraining from advising certain industries in China.[319] Speaking to the *Financial Times*, he said, "There is a clear set of sensitive industries that are at the heart of discussions from a geopolitical basis. So in these industries we will indeed operate less frequently."[320] China's opaque and unpredictable crackdown on corporate consulting, due diligence, and data collection further narrows the quality and quantity of business intelligence for foreign firms seeking to operate within China's economy. The crackdown not only creates challenges for analyzing the risk associated with business transactions but also increases the difficulty of ensuring that transactions comply with U.S. regulations and laws, including sanctions and export controls (see textbox).[321]

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*On July 4, 2024, China released a separate document setting out a three-year action plan for making government procurement fairer. However, details of how this plan will be implemented and enforced remain vague, particularly at the local level. China's Foreign Investment Law, which was implemented in 2020, states that China will provide fair treatment in the procurement process, but foreign businesses continue to report that Chinese businesses receive preference. Given that the Party-state's other priorities call for reducing dependence on foreign suppliers in key technologies, it is unclear whether China will establish a procurement regime that is genuinely fair in practice. Trivium Markets, "All Equal if Made in China," July 5, 2024; American Chamber of Commerce in China, "2024 American Business in China White Paper," April 2024, 54–56, 68–92.

†The Beijing Municipal Bureau of Statistics stated in its notice of the initial fine that it had been unable to deliver the ruling to Mintz's legal representative. The *Wall Street Journal* notes that it is unclear if Mintz had received either the initial notice or the February 2024 penalty. Chun Han Wong, "China Raises Fines on Mintz Due-Diligence Firm," *Wall Street Journal*, March 12, 2024.

‡Though Reuters was unable to determine if these investigations were related to the crackdown, an article published the subsequent month by Chinese state media highlighted another supply chain risk consultancy in Guangdong as a "typical case" of espionage because it worked with a foreign nongovernmental organization that was investigating forced labor in Xinjiang. *Xinhua*, "On the Case | Beyond the National Borders, Behind the Network… These Activities Endangering National Security Require Vigilance" (拍案丨"国门"之外、网络背后……这些危害国家安全的行为要警惕), April 14, 2023. Translation.

China Adds Significant Risks to Routine Business Activities

Foreign businesses in China find themselves in a bind between complying with U.S. and other applicable rules and avoiding crossing ambiguously defined red lines under China's expanding set of rules and administrative measures. On September 24, 2024, China's Ministry of Commerce announced an investigation into U.S. clothing company PVH Corp., whose brands include Tommy Hilfiger and Calvin Klein, for violations of "principles of normal market transactions" by "discriminating" against products produced in Xinjiang.[322] PVH said in July 2020 that it would cease sourcing from factories and mills in Xinjiang due to forced labor concerns.*[323] Xinjiang was the source of 23 percent of the global supply of cotton in 2020 and 2021.[324] The Chinese government's investigation, which was still ongoing as of October 11, 2024, could result in PVH being added to its "unreliable entity" list† and subjected to fines, restrictions, or other penalties.[325] Though other multinational fashion companies have faced scrutiny in the past over their statements on Xinjiang—in 2021, the Swedish fashion company H&M and several other brands faced an ostensibly grassroots boycott in China after state media drew attention to pledges by these companies to stop sourcing from the region—the latest action against PVH marks an escalation in the Party-state's willingness to utilize its sanction authorities to coerce foreign businesses.[326]

China's National Security Law has also created new risks for businesses. China has expanded the reach of its national security apparatus over the past two years, increasing the risk that foreign businesses face investigations and prosecution for carrying out normal business activities. (For more on legislative changes to China's Counterespionage Law and State Secrets Law, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.") The potential for retaliation, coupled with expansive restrictions on foreign access to data and information deemed sensitive by the Party-state, have complicated U.S. businesses' ability to do basic corporate due diligence or to comply with home-market regulations that implicate China.[327] The worsening information environment means U.S. businesses face greater diffi-

*PVH's pledge mirrored moves by other multinational apparel companies to shift their supply chains out of Xinjiang to mitigate the risk of supporting China's forced labor practices as well as to comply with the Uyghur Forced Labor Prevention Act, which took effect in June 2022 and created a rebuttable presumption that products from Xinjiang are made with forced labor and consequently denied entry to the United States. Keith Bradsher and Ana Swanson, "For Companies in China, Pulling Out of Xinjiang Poses 'Messy Dilemma,'" *New York Times*, October 7, 2024; Yasufumi Saito et al., "China Canceled H&M. Every Other Brand Needs to Understand Why," *Bloomberg*, March 14, 2022.

†China's Ministry of Commerce promulgated the Provisions on the Unreliable Entity List in 2020, creating a mechanism to investigate and penalize foreign companies for taking actions perceived as harmful to China's interests. As of October 8, 2024, China has placed five U.S. defense firms on the list for selling military equipment to Taiwan, halting these companies' imports and exports from China, prohibiting investments in China, and barring their senior management from entering China. If added, PVH would be the first U.S. company placed on the list because of its efforts to prevent forced labor in its supply chain. Lester Ross and Kenneth Zhou, "China, the United States, and the Rivalry over the Imposition of Unilateral Trade Sanctions," *WilmerHale*, September 6, 2024; Cari Stinebower, Jacob Harding, and Kai Zhan, "China Adds Additional Entities to the Unreliable Entity List," *Winston and Strawn LLP*, June 11, 2024.

China Adds Significant Risks to Routine Business Activities—*Continued*

culty in meeting their obligations to ensure counterparties in China are not subject to export controls, U.S. investment restrictions, sanctions, the Uyghur Forced Labor Prevention Act, and other requirements under U.S. and other applicable laws.[328]

A growing number of U.S. companies active in China are shifting to sourcing from other countries. According to the AmCham survey, 23 percent of respondents indicated they had begun or were considering relocating manufacturing and/or sourcing out of China.[329] According to the survey, the top three destinations for relocated capacity were other developing economies in Asia, the United States, and Mexico/Canada.[330] This trend was partially driven by increased trade tensions, but geopolitical tensions, uncertainty about the direction of China's domestic policies, and rising manufacturing costs inside China additionally drove importers to find alternatives to China.[331]

Chinese Companies Face Barriers to Listing on U.S. Stock Exchanges

Chinese regulators continue to constrain Chinese companies from listing overseas on U.S. stock exchanges. Just 23 Chinese issuers have listed on a major U.S. stock exchange in the first three quarters of 2024, and the combined initial public offering (IPO) proceeds totaled $1.1 billion.[332] Over 40 percent of this total was raised by one company, the Geely-affiliated EV maker Zeekr. The 2024 deal volume amounts to just a fraction of the listing activity in 2021, just before Chinese regulators clamped down on new overseas listings and increased oversight over Chinese companies' global fundraising activity.* In 2022, China implemented new rules requiring that internet companies seeking to list overseas undergo a cybersecurity review to assess the company's compliance with China's regulations on cross-border data flows.†[333] In 2023, CSRC established a revised approval process for companies going public overseas.[334] Under this new approval mechanism, all companies are required to register their listing with the CSRC, enabling regulators to block any proposed listing that violates China's laws and regulations or poses risks to national security and the CCP.‡ Although the

*In the first three quarters of 2021, 41 companies went public on major U.S. exchanges and raised $13 billion in funding. This includes the $4.4 billion raised by ride-hailing app Didi Global in its blockbuster IPO. Didi reportedly proceeded with its IPO plans despite objections from the Cybersecurity Administration of China, leading to Chinese regulators freezing all Chinese overseas IPO activity for several months. Based on historical data from an internal version of U.S.-China Economic and Security Review Commission, *Chinese Companies Listed on Major U.S. Stock Exchanges*, January 8, 2024; Michael Hytha and Julia Fioretti, "Meihua Becomes China's First U.S. IPO since Didi Crackdown," *Bloomberg*, February 16, 2022.

†In February 2022, the Cyberspace Administration of China introduced a data security review mechanism for companies seeking to list overseas. The mechanism was made mandatory for Chinese companies that collect personal information on more than one million users. Cyberspace Administration of China, *Cybersecurity Review Measures* (网络安全审查办法), December 28, 2021. Translation.

‡Notably, this review requirement applied to companies listing overseas using variable interest entity (VIE) structures—complex corporate structures that many Chinese issuers used to circumvent restrictions on foreign ownership by granting shareholders contractual claims to control in lieu of actual ownership. Prior to 2023, Chinese companies that listed overseas using a VIE were

CSRC's approval mechanism nominally established rules for companies that align with Beijing's economic priorities to raise capital on foreign markets, the mechanism instead created a regulatory logjam for Chinese companies attempting to list overseas.[335] It remains unclear if Beijing will accelerate approvals for overseas listings on U.S. exchanges. In April 2024, the CSRC pledged to facilitate listings in Hong Kong, likely reflecting a preference among Chinese policymakers for companies to list on exchanges under the ultimate control of Beijing.[336]

Delisted Chinese Issuers Continue to Trade on Over-the-Counter Markets

After delisting their shares from a major U.S. exchange, a number of Chinese companies have continued to access global investors via the more loosely regulated U.S. over-the-counter (OTC) markets. OTC markets have traditionally been available to companies that do not meet the requirements for listing on a major stock exchange.[337] These markets operate through decentralized dealer networks that facilitate private party-to-party exchanges, and issuers face less stringent disclosure requirements compared to a major stock exchange. In particular, the Pink Open Market, an OTC market that is operated by the OTC Markets Group and is the most speculative open market provided by the group, has much looser financial standards or reporting requirements than the major U.S. exchanges.[338] Despite these limitations, some large Chinese companies have moved their listings to OTC markets after removing them from a major U.S. exchange. The biggest of these is Chinese ride-hailing giant Didi Global, which exited the New York Stock Exchange in 2022 under pressure from Chinese regulators.* At the end of June 2024, Didi continued to trade on OTC Pink with a market capitalization of $20 billion, making it the largest company primarily traded off-exchange in the United States.[339] Other companies traded on OTC markets include Luckin Coffee, which was forcibly delisted by the Nasdaq in 2020 following an accounting scandal involving fabricated sales and financial figures, as well as a number of Chinese SOEs that appeared to remove their listings from the main U.S. bourses under direction from China's government in late 2022.[340] Despite the higher risk associated with stocks listed OTC, some U.S. investors continue to trade these shares.[341]

Activity around Chinese stocks in the United States remains muted as U.S. policymakers increase scrutiny of Chinese listings. In November 2023, the Chinese fast-fashion compa-

not required to register their listings with the CSRC, as the VIE is not considered a Chinese company under China's law.

*Didi reportedly proceeded with its June 2021 IPO on the New York Stock Exchange (NYSE) despite warnings from China's government to delay the listing until it completed a cybersecurity review. Subsequently, the Cybersecurity Administration of China prevented Didi from registering new users, ordered the removal of Didi's apps from Chinese stores, and launched a probe into Didi's alleged violation of China's data laws. One year later, Didi shareholders approved the company's plan to delist from the NYSE. Didi stated that this delisting was a precondition set by the Chinese government for allowing the company to resume user registrations. Cissy Zhou, "Didi to Exit NYSE on June 10 amid Uncertainty about China Restart," *Nikkei Asia*, June 9, 2022.

ny and e-commerce platform operator Shein* reportedly filed to go public in the United States in what would have been the largest U.S. IPO since Uber's 2019 listing, with the company expected to be valued at $66 billion.†[342] However, the planned listing subsequently faced scrutiny from U.S. policymakers over the company's reported use of forced labor in its supply chains.[343] A Bloomberg investigation published in November 2022 cross-referenced climate and weather signatures on cotton fabrics used in clothing from Shein to determine that they originated in Xinjiang, potentially in violation of restrictions on imports from the region under the Uyghur Forced Labor Prevention Act.‡[344] Due to pressure from U.S. lawmakers and regulators, Shein has reportedly shelved its plans to list in the United States, and is instead exploring a listing on the London Stock Exchange.[345] National security concerns have been raised about U.S.-listed Chinese LiDAR company Hesai.§ DOD added Hesai to its list of Chinese military companies in January 2024, although the *Financial Times* reported in August 2024 that DOD had reversed its determination and plans to remove the company from the list.¶[346] At the same time, other Chinese companies have surged on U.S. stock exchanges. Pinduoduo, a major Chinese e-commerce company that operates its eponymous marketplace in China as well as the Temu e-commerce platform outside of China, had seen its market capitalization increase on the Nasdaq by more than 50 percent between January 2023 and June 2024.[347] Despite Temu being subject to U.S. congressional inquiry over links to forced labor, Pinduoduo is one of the two largest Chinese stocks listed in the United States by market capitalization, following Chinese e-platform giant Alibaba.[348] Combined, Alibaba and Pinduoduo accounted for 46 percent of the total market capitalization of all Chinese companies listed on major U.S. exchanges, with their valuations reaching $441 billion at the end of September 2024.[349]

China's External Economic Relations

In 2024, China sought to promote its alternative frameworks for economic development and cooperation in the

*Shein was founded in China but moved its headquarters to Singapore in 2021. However, the majority of its operations remain in China. *Reuters*, "How China's Shein Became a Fast-Fashion Giant," November 27, 2023.

†Though Shein is formally headquartered in Singapore, it likely would still need approval from Chinese regulators to list overseas given its extensive operations inside China. Shein reportedly approached the Cyberspace Administration of China and CSRC for approval to list overseas following its IPO filing. Nonetheless, Shein has sought to portray itself as a non-Chinese company as it seeks to proceed with its overseas IPO. James Kynge, Sun Yu, and Ryan McMorrow, "Shein Tries to Suppress Chair's Claim That Fashion Retailer Is 'American,'" *Financial Times*, June 14, 2024; Eleanor Olcott et al., "Shein Seeks Chinese Regulators Tacit Approval for U.S. Public Offering," *Financial Times*, February 7, 2024.

‡For more on the risks and challenges to U.S. regulations and laws posed by Chinese e-commerce firms, see Nicholas Kaufman, "Shein, Temu, and Chinese e-Commerce: Data Risks, Sourcing Violations, and Trade Loopholes," *U.S.-China Economic and Security Review Commission*, April 14, 2023.

§Lidar is a remote-sensing technology with emerging and wide-ranging applications, including computer vision, autonomous driving, and satellite-based imaging. Hesai is the global market leader in automotive lidar.

¶DOD is mandated to produce the Chinese military companies list by Section 1260H of the National Defense Authorization Act for FY 2021. Unlike entities on a sanctions list such as the Specially Designated Nationals (SDNs) list, inclusion on the Section 1260H list does not prohibit U.S. investment or many other activities, though Congress created new defense contracting restrictions for companies on the list at the end of 2023. Jingli Jiang et al., "DoD Updates Section 1260H List of Chinese Military Companies Operating Directly or Indirectly in the United States," *Akin*, February 5, 2024.

face of mounting tensions with trade partners wary of Beijing's damaging trade practices. The United States and the EU have each announced tariffs on Chinese-made EVs and other imports that threaten to undercut domestic producers in key industries.* In defiance of the U.S.-led sanctions regime, China continues to offer material support to Russia, acting opportunistically to win energy concessions and promote alternative payment systems. (For further discussion of China's support for Russia's war of aggression in Ukraine, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).") Meanwhile, China has retooled its flagship Belt and Road Initiative (BRI) to limit its exposure to risk of default. It is again increasing lending throughout the developing world, though this time mainly in the form of emergency rescue loans to bail out indebted countries rather than fund new infrastructure projects.

China's Economic Relations with Advanced Economies Come under Strain

Business climate chills between European capitals and Beijing as EU investigation brings about retaliatory tariffs to stem Chinese export of overcapacity. Last year, goods trade between the EU and China declined for the first time in over a decade, down 13.8 percent year-over-year.[350] China still constitutes the largest origin for EU goods imports (20.5 percent of the total) and the third-largest market for EU goods exports (8.8 percent).[351] Yet signs of a potential protracted decline in economic engagement between two of the world's largest economies have emerged. The European Chamber of Commerce in China's most recent annual business confidence survey found only 42 percent of European companies are considering expanding operations in China in 2024, the lowest level on record.[352] Companies cited China's economic slowdown, overcapacity, and regulatory barriers among their top concerns, with 68 percent of those surveyed saying conducting business in China had become more difficult, the highest level on record.[353]

China's unfair trade practices have become a matter of acute concern for European governments. In late 2023, the European Commission launched an investigation into Chinese subsidies for EVs.[354] Despite the decline in total goods trade in 2023, automotive imports from China grew sharply by 36.7 percent year-over-year.[355] Preliminary findings released in June 2024 found EU carmakers were being harmed by unfair Chinese subsidization of their domestic EV value chain.[356] In July, the EU imposed tariffs between 17.4 percent and 37.6 percent on select Chinese automotive makers† on top of the existing 10 percent tariff on all vehicle imports.[357] Beijing has signaled the potential for retaliatory tariffs, which may further

*In August 2024, Canada also announced it would impose a 100 percent tariff on imports of Chinese EVs and a 25 percent tariff on imported steel and aluminum from China, with the measures taking effect in October 2024. Prime Minister Justin Trudeau referenced China's intentional, state-directed policy of overcapacity as the rationale for the tariffs. Lisa Xing, "Chinese-Made EVs Are Now Subject to a 100% Tariff. What Does This Mean for Canadians?" *CBC News*, October 1, 2024; Promit Mukherjee and Akash Sriram, "Canada to Impose 100% Tariff on Chinese EVs, including Teslas," *Reuters*, August 27, 2024.

†Individual duties by parent company are 17.4 percent for BYD, 19.9 percent for Geely, and 37.6 percent for SAIC Group. For other companies that cooperated with the investigation, the rate is 20.8 percent, and it is 37.6 percent for those that did not cooperate. European Commission, *Commission Imposes Provisional Countervailing Duties on Imports of Battery Electric Vehicles from China while Discussions with China Continue*, July 4, 2024.

exacerbate tensions alongside contributing factors like China's ongoing support for Russia and increasingly brazen attempts to silence dissidents residing in European countries.[358]

Chinese EV companies have moved to offshore manufacturing in a hedge against rising trade tensions. They have found a receptive partner in Hungary, where Chinese battery maker Contemporary Amperex Technology Co., Ltd (CATL) began building Europe's largest battery factory in 2022, and this year BYD announced plans to build its first European EV production facility in the southern city of Szeged.[359] During his May visit to France, Serbia, and Hungary, Xi said during a press event with Hungarian Prime Minister Viktor Orbán that China and Hungary would embark down a "golden path" together, reiterating China's commitment to their comprehensive strategic partnership.[360] Xi's trip and fervent support for Prime Minister Orbán were widely seen as intended to sow division in the EU bloc.*[361]

Emerging Economies Become Increasingly Concerned with Excess Chinese Exports

Chinese exports to emerging economies have drastically grown, straining trade ties and causing certain governments to launch trade investigations and impose tariffs on Chinese imports. As advanced economies implement tariffs, China is shifting exports of manufactured goods to emerging economies, enlarging its bilateral trade surpluses across the developing world. Between 2019 and 2023, China's manufacturing trade surplus with ASEAN more than doubled, rising from $96 billion to $231 billion.[362] Chinese exports to Latin America and the Caribbean are increasing at a rapid pace as well. For example, China's trade surplus with Mexico reached $68 billion in 2023, almost doubling from $35.1 billion in 2019.[363] China is also increasingly offshoring production capacity by building factories in "connector countries" at least in part to circumvent trade restrictions in overseas markets.[364] (For further discussion on issues pertaining to Chinese overseas manufacturing trends, see the section "Chinese State Support for Overseas Manufacturing Likely Perpetuates Economic Distortions" in Chapter 4, "Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws.") An overreliance on Chinese exports can harm both the local economy and U.S. interests. Emerging market governments may be wary that Chinese companies' local market power could undercut their domestic industries and make certain firms vulnerable to Chinese anticompetitive practices, such as withholding supply or colluding to raise prices.[365] Chinese dominance of supply chains also exposes emerging economies to market disruptions such as pandemic-like external shocks and potential economic coercion.[366]

Emerging market officials have begun to act to protect specific industries through trade investigations and tariffs. In the past year, emerging markets including Argentina, Brazil, India, and Vietnam have launched anti-dumping and anti-subsidy

*For more on China-EU relations, see U.S.-China Economic and Security Review Commission, Chapter 5, Section 1, "Europe-China Relations: Convergence and Divergence in Transatlantic Cooperation," in *2023 Annual Report to Congress*, November 2023, 524–533.

investigations against China, and Indonesia, Mexico, South Africa, and Turkey have all imposed tariffs on certain Chinese imports.[367] However, rising Chinese imports can create dilemmas for emerging economy officials whose economies are more dependent on China and more vulnerable to potential retaliation than the United States or the EU.[368] To avoid broader disruptions to their trading relationships with China, emerging economies may be forced to impose trade restrictions and other localization policies that could be weaker than required and insufficient to stem the flow of Chinese exports.[369]

China Enhances Economic Support for Russia

Record bilateral trade volumes support Russia's wartime economy, blunting the impact of international sanctions. Total two-way trade between Russia and China reached $240.1 billion in 2023, up 26.3 percent from $190 billion a year earlier and 60.4 percent from 2021 levels, the last full year of data before Russia's invasion of Ukraine.[370] Given that Russia's total trade with the world declined 9.6 percent between 2021 and 2023 from $785.8 billion to $710.2 billion, the Russian economy is increasingly reliant on trade with China to stay afloat.[371] Though Russian President Vladimir Putin praised the level of cooperation and Xi pronounced a "new era" in the "no limits" partnership between their countries during his May visit to Beijing, Moscow may come to resent the asymmetry in the relationship.[372]

China continues to increase purchases of Russian energy exports hit by Western sanctions, leveraging its neighbor's limited options to obtain favorable long-term price concessions. Chinese imports of Russian crude oil were up 17 percent year-over-year through April and now comprise 21 percent of China's total crude imports.[373] Russia surpassed Saudi Arabia as China's top foreign crude oil supplier in 2023.[374] Coal and natural gas exports from Russia to China have both doubled in the time since Russia invaded Ukraine.[375] A point of major interest for Moscow is closing a deal with Beijing on the proposed Power of Siberia 2 pipeline that would carry eastward to China 50 billion cubic meters of natural gas* per year, almost half the natural gas that previously flowed westward from the Yamal Peninsula to European markets.[376] However, Beijing continues to slow-walk the deal, a dynamic that allows Chinese importers to negotiate favorable prices in contracts not only with Russian suppliers but also with suppliers from other countries trepid to lose market share.[377] According to analysis from Columbia University's Center on Global Energy Policy, China would be reliant on piped gas from Russia for 40 percent of its net imports if Power of Siberia 2 came online. This scenario would diminish the need for liquified natural gas shipped by sea from future potential adversaries like the United States and Australia, who may cut off supply and impose a naval blockade if a conflict broke out. On the other hand, building the pipeline would put China's gas imports from Russia on par with the EU's dependency on the eve of the war in Ukraine, a situation of overreliance Beijing has long been reluc-

*Natural gas accounted for 7.8 percent of China's total energy supply in 2022, compared to 61 percent from coal and 17.9 percent from oil. For more on China's energy mix and reliance on imports, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience." International Energy Agency, "China."

tant to abide.[378] For the time being, Beijing is unlikely to feel the need to finalize an agreement unless the price is too low to forgo.

Chinese exports and transshipment of dual-use technology and goods have surged, aiding Russia's war effort in Ukraine. Since the invasion of Ukraine in February 2022, the Commerce Department—in coordination with the EU, Japan, and the UK—has maintained and periodically updated the Common High Priority List (CHPL),* a tiered list of dual-use items Russia seeks to acquire for its weapons programs subject to U.S.-led export controls.[379] While no public evidence existed as of October 11, 2024 to show China is providing lethal aid† to Russia, it has substantially increased the sale of items included on the CHPL both directly to Russia and to countries suspected of reexporting to Russia.[380] According to analysis from the Atlantic Council, China's monthly exports of CHPL items increased steadily in the leadup to February 2022, then fell off after the initial imposition of export controls before steadily climbing from July 2022 to higher levels than pre-invasion.[381] These higher levels have been sustained since.[382] In 2023, China exported $4.5 billion of CHPL goods to Russia.[383] In particular, the sale of integrated circuits such as those used in precision-guided munitions increased from a monthly average of $5.3 million in 2021 to $13.7 million in 2023.[384] Even more stark is the rising supply of Computer Numerically Controlled (CNC) machine tools and parts used to manufacture a variety of industrial products including vehicles and weapons, which rose from a monthly average of $7.4 million in 2021 to $66.6 million in 2023.[385]

Beijing Retools Lending as BRI Enters Second Decade

Chinese overseas lending has recovered steadily from pandemic-era lows as Beijing reshapes development financing to mitigate its risk.[386] Lending to foreign countries under China's flagship international development program, BRI, increased 18 percent year-over-year in 2023 to $92.4 billion,‡ a level still well off the annual peak of nearly $120 billion recorded in 2018.[387] A combination of factors led China to pull back BRI lending starting in 2019, among them uncertainty brought on by the COVID-19 pandemic,

*As of February 23, 2024, there are 50 items included on the Common High Priority List. Tier 1 items of highest concern include a broad range of electronic integrated circuits used in precision-guided weapons systems for which Russia has no domestic production capacity; Tier 2 items include electronic components Russia can produce but prefers to source from the United States and partners and allies; Tier 3.A includes electronic components with a broad range of suppliers; Tier 3.B includes mechanical and other components such as ball and roller bearings, airplane and helicopter parts, optics, navigation equipment, etc.; Tier 4.A includes manufacturing equipment for electronic components; and Tier 4.B includes Computer Numerically Controlled (CNC) machines and components used in mechanical and metal manufacturing. U.S. Department of Commerce, Bureau of Industry and Security, *Common High Priority List*, February 23, 2024.

†The Biden Administration has repeatedly claimed China is providing "nonlethal" support to Russia but disagreed with a claim in March 2024 by the British Defense Secretary that China was supplying lethal aid, saying Washington did not share the assessment. Reid Standish, "U.S. Pushes Back on British Claim That China Sending Lethal Aid to Russia," *Radio Free Europe*, May 23, 2024.

‡By comparison, the United States provided $63.5 billion in official development assistance (ODA) in 2023 and $228.7 billion when combined with private flows of development assistance. Development assistance from the United States often comprises a large grant portion and adheres to high standards regarding transparency, accountability, and participation set forth in international frameworks, in contrast to opaque BRI lending that typically has less favorable terms for the borrower. Organisation for Economic Co-operation and Development, "OECD Data Explorer–DAC1: Flows by Donor (ODA+OOF+Private)"; Kristen A. Cordell, "The Evolving Relationship between the International Development Architecture and China's Belt and Road," *Brookings Institution*, October 2020.

slowing domestic growth, and fears of insolvency of borrower nations struggling to service high levels of sovereign debt.[388] However, the composition of Chinese development lending has changed, with investment deals* making up a greater portion of total lending than construction projects for the first time in 2023.[389] This change in composition reflects both the scaling back of grandiose infrastructure projects that were common early on in BRI as well as a move to provide capital to borrower economies. In his speech during the third BRI Summit in October 2023, Xi painted a picture of moving from large-scale projects to "fine brushstrokes," metaphorically describing many smaller projects.[390]

China moves unilaterally to secure payment from debt-strapped borrower nations, undermining international efforts to alleviate debt burdens. China is now the world's largest official debt collector, with an estimated $1.1 trillion to $1.5 trillion of debt outstanding from foreign borrowers.[391] China has used BRI lending as a strategy to exert leverage over less developed countries and shore up access to key resources like critical minerals, with Chinese SOEs taking up equity stakes in mining operations on five continents.†[392] According to data from William & Mary research lab AidData, 80 percent of China's overseas lending portfolio is to countries in financial distress.[393] Currently, 55 percent of BRI loans to low- and middle-income countries are in their principal repayment period, a figure expected to rise to 75 percent by 2030.[394] Recognizing that its risk management and due diligence practices were lax in the early years of BRI, China has taken a number of steps to mitigate its exposure to potential default on outstanding loans. First, it has dialed up RMB-denominated emergency rescue lending‡ to borrowers to ensure the cash reserves necessary to service debt.[395] The analysis from AidData runs through the end of 2021 and finds that by that time, China had provided 128 emergency rescue loans to 22 debtor countries worth a combined $240 billion.[396] Emergency rescue loans jumped from less than 5 percent of China's overseas lending portfolio to low- and middle-income countries in 2010 to nearly 60 percent by 2022 (see Figure 7).[397] Second, it has aggressively sought to collateralize loans by requiring borrowers to maintain escrow accounts from which China can draw funds in the event of default.[398] Last, it is increasing interest rates for late payment, now set at a maximum 8.7 percent.[399]

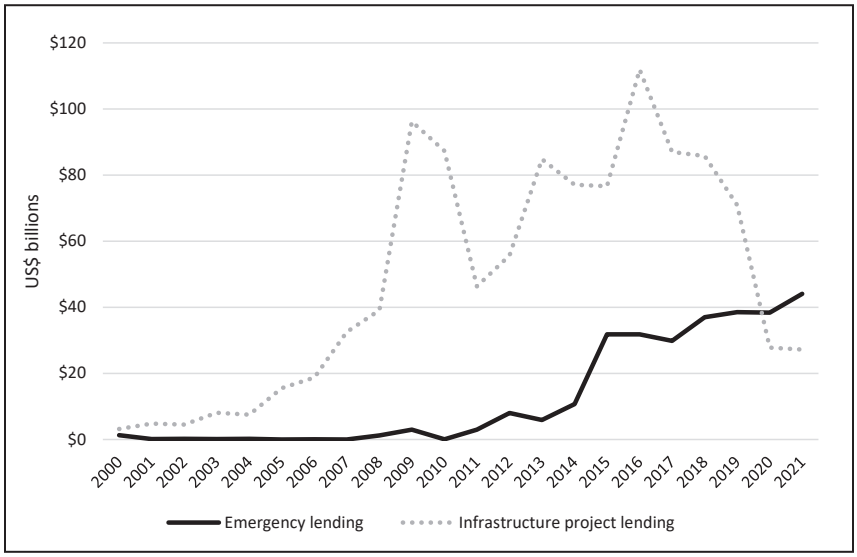
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*BRI lending is typically broken out into two subcategories: construction and investment. Construction consists of lending often financed by Chinese state banks to build infrastructure, with a timeline for completion and no implied ownership of the assets. Investment deals are financed by Chinese investors to take an equity stake in an asset, portending an indefinite Chinese presence in the host country. Christoph Dedopil, "China Belt and Road Initiative (BRI) Investment Report 2023," *Griffith University and Fudan University*, February 2024, 2; Derek Scissors, "China's Overseas Investment Starts the Long Climb Back," *American Enterprise Institute*, July 20, 2021.

†For more on China's use of BRI as leverage, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 1, "Belt and Road Initiative," in *2018 Annual Report to Congress*, November 2018, 259–303.

‡Emergency rescue loans typically are provided as balance of payment support by the PBOC to the central banks of debtor countries as a component of debt restructuring. However, there has been a rise in emergency lending from Chinese state banks working with foreign banks to service BRI debt in borrower nations. Keith Bradsher, "China Is Lending Billions to Countries in Financial Trouble," *New York Times*, November 6, 2023; Alex Wooley, "Belt and Road Bailout Lending Reaches Record Levels, Raising Questions about the Future of China's Flagship Global Infrastructure Program," *AidData*, March 27, 2023.

Figure 7: China's Lending to Low- and Middle-Income Economies by Financial Instrument, 2000–2021



Note: Infrastructure project lending is defined by AidData as loans linked to specific investment projects involving construction and other work on physical infrastructure in its database of Chinese overseas lending. Emergency lending includes loans AidData identified as rescue loans, or loans that allowed a sovereign debtor to service its debt, finance general budgetary expenditures, or shore up foreign exchange reserves.
Source: AidData, "Global Chinese Development Finance Dataset, Version 3.0," November 6, 2023.

China's unilateral lending practices undermine international efforts to reduce the debt burden of low- and middle-income countries. An argument has been made that Beijing's efforts to ensure repayment undermine international efforts to alleviate debt burdens of low-income countries, such as the G20 Common Framework for Debt Treatments, in which China agreed to be a participant in 2020.[400] Members of the Paris Club, a group of international countries dedicated to resolving sovereign debt issues in a sustainable manner, are edged out by guaranteed repayment plans that China coerces borrowers to accept, all the while increasing the debt obligation under increasingly burdensome terms.[401] For its part, the United States has stepped up development assistance in recent years and worked with partners and allies to provide alternative options for much-needed infrastructure investment in low- and middle-income countries with transparent terms, such as the U.S. International Development Finance Corporation (DFC) and more recent G7 initiative Partnership for Global Infrastructure and Investment (PGII).[402] From 2014 to 2017, China's development financing was triple that of the United States, and by 2021 it exceeded the United States by only 30 percent.[403]

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CHAPTER 2: U.S.-CHINA SECURITY AND FOREIGN AFFAIRS (YEAR IN REVIEW)

Abstract

In 2024, China sought to mitigate internal and external risks by continuing to tighten political control at home and exercising a combination of coercive and persuasive strategies abroad. To combat persistent problems of corruption and fears of political disloyalty, General Secretary of the Chinese Communist Party (CCP) Xi Jinping and a small circle of top leaders tightened their grip on the Party rank and file while continuing to unseat and in some cases disappear high-ranking figures across the government and military. Internationally, China attempted to promote itself as the world leader best positioned to solve and prevent conflicts, represent low- and middle-income countries, and promote economic growth while also making it clear that it opposed U.S. policies and alliance relationships. In its diplomacy with the United States, China sought to use the promise of bilateral dialogues on narrow areas of common interest to derail what it perceives as the United States' policy of strategic competition. It sought to tighten ties with Europe and encourage divisions within the transatlantic alliance but continued to undermine its own credibility through its intensifying economic, military, diplomatic, and political support for Russia. At the same time, China is increasingly providing support and resources to countries involved in military operations against Western allies. China also turned a blind eye as Iran and North Korea act in ways that undermine global stability, and it has demonstrated willingness to exploit tensions in the Middle East for geopolitical gain. Overall, China reacted to other countries' efforts to protect their economic and physical security by portraying them as hostile, exclusionary, and destabilizing. In the case of the South China Sea, China resorted to more dangerous, violent actions. Despite the willingness of some governments to deepen cooperation with Beijing in various domains, many other countries remained deeply skeptical of China's intentions and proposals.

Key Findings

- As part of its efforts to solidify its control across the Party, state, and military, in 2024 the CCP leadership introduced new measures on political discipline and anticorruption, targeting everyone from low-ranking Party members to senior military officers. From the top of the system, General Secretary Xi delivered dire messages to Party and military audiences on the severity of remaining problems, revived some Maoist concepts and slogans, and emphasized the importance of political loyalty and enduring hardship. China's leaders viewed enhanced domestic control

as a key factor in China's ability to accomplish its domestic and international objectives.

- China continues to assert that the United States poses intensifying strategic risk. Despite a bilateral agreement reached in late 2023 to pursue limited cooperation on military communication, climate change, countering fentanyl and other drugs, artificial intelligence (AI), and people-to-people ties, China has continued its efforts to counter or weaken U.S. policies without changing its own behavior. Fundamental divergences on issues such as Taiwan and access to markets, capital, and technology remain.
- In 2024, China accelerated efforts to build international support from as many countries as possible—with a focus on the developing nations of what it calls the "Global South"—for China's claims to global leadership, its continuing efforts to isolate and subjugate Taiwan, and its desired forms of economic cooperation. At the same time, Beijing sought to portray actions taken by the United States and many of its allies and partners to protect their own interests and established global norms as undermining the prospects for peace, stability, and prosperity and the future of collective international progress led by China. (For information on China's activities in the Middle East in 2024, see Chapter 5, "China and the Middle East.")
- China and Russia committed to further deepening their joint efforts against the United States. China has sustained its economic, diplomatic, political, and material support for Russia's war effort in Ukraine. China also provided satellite imagery and dual-use materials that Russia is using for the reconstitution of its defense industry—such as weapons components, machine tools, and microelectronics—all while claiming to play a leading role in advancing a political solution to the conflict. In exchange for such support, Moscow has reportedly provided submarine, aeronautic, and missile technologies to Beijing as defense cooperation between the two countries continues to strengthen.
- China sought to counteract a deteriorating strategic relationship in Europe, using mainly positive rhetoric and promises of deepened cooperation to persuade the EU and individual European countries to distance themselves from the United States and abandon their efforts to de-risk relations with China. Xi tried to reframe Europe's economic dependencies on China as the byproducts of a beneficial symbiosis, to downplay political differences, and to emphasize supposed shared interests in the creation of a more equal international system.
- China's destabilizing behavior in the Indo-Pacific region continued. China's naval and coast guard presence around the Japanese-administered Senkaku Islands and flights near Japanese airspace in the East China Sea represented a significant escalation from previous activity. In the South China Sea, China's aggressive behavior escalated to new levels in 2024 as the China Coast Guard (CCG) took increasingly aggressive, unsafe, and even violent measures to attempt to block the Philippines,

a U.S. treaty ally, from exercising its lawful rights in its exclusive economic zone (EEZ). China's officials continued to leverage lawfare tactics to attempt to normalize their efforts to impose their will upon other countries in the region through coercive and illegal actions, superior force, and numbers.

Introduction

This chapter assesses key developments in China's domestic and foreign affairs in 2024. It begins by examining the CCP's domestic measures to enhance control across the Party-state bureaucracy and the military. Next, it describes developments in China-U.S. relations. The chapter concludes with a survey of China's approach to foreign affairs around the world in 2024. The chapter's findings are based on open source research and analysis, Commission hearings, and discussions with outside experts.

Xi Jinping Strengthens Party Control and Oversight

In 2024, General Secretary Xi Jinping continued to tighten his control over the Party, state, society, and military, broadly framing these efforts as essential to improve China's ability to accomplish its most important domestic and international objectives. Xi emphasized the importance of strengthening political discipline and fighting disloyalty while also making use of his signature anticorruption campaign to purge civilian and defense officials alike. He also oversaw further restructuring of the People's Liberation Army (PLA) to bring additional domains of warfare under direct control of the political leadership.

Implications of Xi's Power for Succession and Stability

Xi's tight hold on power and apparent disinterest in succession planning creates risk for China's political system. At the CCP's 19th Party Congress in 2017 and again at its 20th in 2022, Xi diverged from what had been previous political practice by not indicating an intended successor as top leader of the Party.[1] Experts have assessed that although Xi's choices to extend his own rule* without selecting a successor may increase his own power in the short term, over the long term they increase the risk that the regime will experience instability.[2] In the continued absence of a clear succession plan,† Xi's unexpected demise or incapacitation

*Xi's positions as CCP general secretary and chairman of the CCP's Central Military Commission (CMC) do not have term limits. His third top position as the head of state of the People's Republic of China (PRC) was previously limited to two terms, but under Xi's leadership this term limit was removed in 2018, paving the way for him to hold all three positions indefinitely. Richard McGregor and Jude Blanchette, "After Xi: Future Scenarios for Leadership Succession in Post-Xi Jinping Era," *Center for Strategic and International Studies*, April 21, 2021, 7.

†Although there are rules on paper about the selection process for each of Xi's top three positions, experts assess that the process of carrying out this selection would nevertheless be highly complex and uncertain. If Xi were to pass away, the CCP Charter suggests the CCP Central Committee would meet to select a new general secretary from the current Politburo Standing Committee and to select a new CMC chairman, although these two leaders need not necessarily be the same person. According to the PRC Constitution, the role of head of state would pass to the sitting vice president of China—who currently is not a member of the Politburo Standing Committee and thus not a candidate for the other two top positions. Informal consultation and bargaining by Party elites would likely play an important role in determining who is ultimately selected, a process that could be particularly fraught or prone to infighting in the event of a sudden power vacuum. *China Daily*, "Brief Introduction of Han Zheng—Chinese Vice President," March 11, 2023; Wanyuan Song and Tessa Wong, "Politburo Standing Committee: Who are the

Implications of Xi's Power for Succession and Stability—*Continued*

could lead to a disorderly succession.[3] The delay in designating a successor also requires any individuals seeking to be considered a candidate in the future to continue demonstrating their loyalty to Xi in the meantime, which may contribute to escalating political tension.[4]

CCP Promotes Greater Societal Alignment with Xi's Vision of National Security

This year marked the ten-year anniversary of Xi's introduction of the Comprehensive National Security Concept, which the CCP sought to leverage to attune China's population to internal and external threats and the importance of rallying around the Party to counter them.[5] The concept, which when introduced in 2014 heralded a dramatic broadening and elevation of conceptions of national security within China's policy framework, emphasizes that threats to China and to the CCP may originate from any direction, that international and domestic threats can interact with one another, and that coordinated, proactive efforts are thus required to manage them.* (For more on Xi's Comprehensive National Security Concept and the CCP's efforts to prepare China for extreme scenarios, see Chapter 7, "China's News Measures for Control, Mobilization, and Resilience.") The CCP highlighted the anniversary of the concept's introduction during its annual observation of "National Security Education Day"† to further promote it to the general public, attempting to use it to drum up support for the Party's absolute leadership over all domains.‡[6] Some of the Party's efforts also appeared deliberately targeted at increasing the population's resistance to foreign narratives. For example, an article circulated in Party media by the director of the Political Department of China's Ministry of State Security (MSS)

Men Who Rule China Now?" *BBC*, October 23, 2022; Neil Thomas, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on CCP Decision-Making and the 20th Party Congress*, January 27, 2022, 15; Richard McGregor and Jude Blanchette, "After Xi: Future Scenarios for Leadership Succession in Post-Xi Jinping Era," *Center for Strategic and International Studies*, April 21, 2021, 16–17.

*For more on Xi's efforts to incorporate national security and the Comprehensive National Security Concept into decision-making across all policy domains, see U.S.-China Economic and Security Review Commission, Chapter 1, "CCP Decision-Making and Xi Jinping's Centralization of Authority," in *2022 Annual Report to Congress*, November 2022.

†National Security Education Day is an annual event mandated by China's National Security Law of 2015. Aaran Hope, "Learning from National Security Education Day," *Jamestown Foundation*, April 26, 2024.

‡China Central Television circulated a large propaganda graphic over 12 pages in length, which presented a timeline of key developments in the implementation of Xi's concept, summarized the wide range of domestic and international areas the concept applies to, and then prominently emphasized the importance of "Upholding the Party's Absolute Leadership of National Security Work." The graphic was circulated in *China Daily* under a title claiming "It Concerns You and Me!" The Party's official mouthpiece, the *People's Daily*, released a promotional video purporting to show that the Party's faithfulness to this concept over the past ten years had had a profound, positive impact on every domain of people's lives and every element of China's domestic and international success. Alongside the video, it released an 18-line poem painting a positive image of the Party's national security practice as entirely for the people's benefit. *China Daily*, "It Concerns You and Me! One Graphic Completely Explains the Comprehensive National Security Concept" (事关你我！一图全解总体国家安全观), April 15, 2024. Translation; *People's Daily*, "Comprehensive National Security Concept 10 Year Anniversary Promotional Video | These Ten Years" (总体国家安全观10周年宣传片丨这十年), April 15, 2024. Translation.

recommended that CCP cadres organize "public opinion struggles against the deliberate provocation of hype and smear attacks by some foreign media," arguing that this type of educational event would help the public learn that "the world is not peaceful" and strengthen their resistance to foreign messaging.[7]

Amended State Council Organic Law Formalizes CCP Executive Control over the State

The year saw a further consolidation of the Communist Party's control over the state bureaucracy and a continued concentration of power within the Party into the hands of Xi Jinping. On March 11, China's National People's Congress (NPC) passed an amendment to the Organic Law of the State Council, the highest organ of executive power within China's government, formally enshrining CCP executive control over the body.[8] Specifically, the revised law included new provisions to clarify that the State Council adheres to Xi's guiding ideology and "resolutely implements the decisions and arrangements of the CCP Central Committee."[9] This represents an additional step in Xi's more than decade-long effort to strengthen the Party's control over government institutions and his personal control over the Party.*[10] The addition of these provisions codifies a Party-state relationship that already exists in practice due to previous political and institutional changes under Xi;† nevertheless, according to an explanation by the vice chairman of the NPC ahead of the meeting, clarifying these points was "the most important political requirement" behind the amendment.‡[11]

CCP Emphasizes Party Loyalty and Control through Anticorruption Campaign and Intensified Party Discipline

China's leadership undertook new efforts over the last year to enhance Party control through strengthened measures. Unlike in a rule of law system, combatting corruption under the CCP's rule by law system can often be concerned as much with ensuring Party loyalty and political control as with traditional notions of preventing malfeasance of public trust and resources. While corruption is a concern in China, and the Party does view corruption as a threat to its legitimacy under some circumstances, Xi's large-scale and highly institutionalized anticorruption campaign continues to function as an all-purpose governing tool whose purpose is to strengthen his control over the Party and the Party's control over Chinese society.[12]

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*For more on Xi's organizational changes to strengthen both the CCP's leading role in China's decision-making and his own control within the Party, see U.S.-China Economic and Security Review Commission, Chapter 1, "CCP Decision-Making and Xi Jinping's Centralization of Authority," in *2022 Annual Report to Congress*, November 2022.

†Some observers note that the addition of an article entrenching CCP leadership can be understood as the implementation of a 2018 constitutional provision that the Party's leadership be regarded as "the defining feature of Socialism with Chinese Characteristics" and of a 2019 order by the CCP Central Committee requiring "the Party's comprehensive leadership" to be written into the organic laws of China's state institutions. Changhao Wei, "NPC 2024: Annotated Translation of the Revised State Council Organic Law," *NPC Observer*, March 11, 2024.

‡The amendment also made other changes to codify the functions of various State Council meetings, specify the duties of vice premiers and state councilors, and formalize other practices that had developed since the law's introduction in 1982, such as the inclusion of the governor of the People's Bank of China as a member of the State Council. Cui Fandi, "Revised Organic Law of the State Council Passed," *Global Times*, March 11, 2024; *NPC Observer*, "NPC 2024: Annotated Translation of the Revised State Council Organic Law," March 11, 2024; *People's Daily*, "Explanation of 'Organic Law of the State Council of the People's Republic of China (Draft Revision)'" (关于《中华人民共和国国务院组织法(修订草案)》), March 5, 2024. Translation.

Revised CCP Discipline Regulations Raise Demands on Party Rank and File

The CCP continued to tighten political control over cadres and Party members to maintain its power and enhance its responsiveness.* In December 2023, the CCP issued a revised version of the Regulations on Disciplinary Actions of the Chinese Communist Party, which came into effect in January 2024.[13] First, the revision increased the regulations' emphasis on "political discipline" as the most fundamental element of Party discipline while simultaneously expanding the concept to include several infractions previously considered less serious.†[14] Second, the revision increased the regulations' emphasis on the "strictness" of discipline across the board.[15] Another noteworthy adjustment added disciplinary provisions including potential removal from internal Party positions for "grave" cases of "privately reading, browsing, and listening to newspapers, books, audio-visual products, electronic reading materials, and online materials with serious political problems."[16] The CCP additionally launched a formal education campaign, running from April to July, for Party members at all levels to study the revised regulations.[17] The campaign notice emphasized that the Party should combat false loyalty to the Party Central Committee.[18]

Xi Warns Party and Military Leadership to Strengthen Political Loyalty while Invoking Anticorruption

Xi called upon China's civilian leadership to adhere to the demands of his politically motivated anticorruption campaign.‡ In January 2024, Xi gave a speech to the CCP's Central Commission for Discipline Inspection (CCDI) on what he called Party "self-revolution," a term he has promoted since at least 2016 to describe the CCP's responsibility to self-govern, self-regulate, and adapt itself to the demands of the times.[19] According to Arran Hope, editor of the Jamestown Foundation *China Brief*, the phrase is one Xi has "resuscitated from the Mao era," representing "spiritually puritanical self-discipline [that] must perpetually underpin the conduct of all cadres."[20] Xi's speech and the other CCP materials that expounded upon the term made clear that it would include expanded anticorruption measures while simultaneously emphasizing political loyalty, political discipline, and adherence to Xi's directives.[21] These materials indicated that "power-concentrated, capital-intensive, and

*As of December 2023, there were approximately 99 million Party members in China, representing about 7 percent of China's population. *Xinhua*, "Chinese Communist Party Statistical Bulletin" (中国共产党党内统计公报), *People's Government of the People's Republic of China*, June 30, 2024. Translation; Statista, "Chinese Communist Party—Statistics and Facts."

†The CCP's discipline regulations differentiate between "political discipline," "organizational discipline," "integrity discipline," "mass discipline," "work discipline," and "life discipline," which they list in this order. Chinese Communist Party, "Regulations on Disciplinary Actions of the Chinese Communist Party (Approved by the CCP Central Committee Politburo on December 23, 2003, Issued by the CCP Central Committee on December 31, 2003, Revised for the Third Time by the CCP Central Committee Politburo on December 8, 2023, and Issued by the CCP Central Committee on December 19, 2023)" (中国共产党纪律处分条例 (2003年12月23日中共中央政治局会议审议批准 2003年12月31日中共中央发布 2023年12月8日中共中央政治局会议第三次修订 2023年12月19日中共中央发布)), *China Military Online*, December 19, 2023. Translation.

‡In March 2024, Xi made a proactive attempt to influence the political mindset of young officials, warning in a speech at the CCP's Central Party School that young officials must be prepared to bear particularly "heavy responsibilities" in practicing political loyalty and Party discipline. *Xinhua*, "Xi Urges Young Officials to Take on Historical Task on New Journey," *State Council of the People's Republic of China*, March 1, 2024.

resource-rich fields" such as finance, state-owned enterprises (SOEs), energy, medicine, and infrastructure would be particular targets in upcoming purges.[22]

Xi delivered similar messages to the top military leadership in June 2024. Between June 17 and 19, 2024, Xi hosted a military political work conference for leaders from the Central Military Commission (CMC) in Yan'an, a city celebrated as the birthplace of the CCP revolution, where—according to reports of his speech—he emphasized that military power must always remain "in the hands of those who are loyal and dependable to the Party."[23] Xi contextualized his remarks by warning that China's military "is facing intricate and complex tests in politics" that will have bearing on its performance in a time of great change for the military, the Party, the country, and the world at large.[24] He claimed the continued existence of "deep-seated contradictions and problems" in the areas of "politics, ideology, organization, style, [and] discipline" and argued that their "roots lie in ideals and beliefs, Party spirit cultivation, official ethics, and character."[25] Raising the specter of his anticorruption campaign, Xi also reportedly warned that "there are no hiding places for any corrupt elements in the military" and repeated similar messages as those covered in his speech to the civilian CCP Central Discipline Inspection Commission in January 2024.[26]

Military and Civilian Leaders Fall to Xi's Anticorruption Campaign

The CCP continued to intensify ongoing purges of military and defense leaders, especially those with influence over the country's nuclear and missile arsenals and other advanced equipment. Following the removal of several PLA Rocket Force leaders purged during the summer and fall of 2023,* similar events continued to rock the PLA leadership through late 2023 and the first half of 2024.[27] In December 2023, the NPC Standing Committee announced the expulsion of nine military representatives from their positions on the NPC.[28] Four of these nine leaders were affiliated with the PLA Rocket Force, two with the CMC Equipment Development Department, and one each from the CMC Joint Staff Department, the PLA Air Force, and the PLA Navy.[29] Although no explanation was provided for the dismissals at the time, the body stated in mid-January 2024 that they were attributable to "serious violations of law and discipline."[30] Also in December 2023, China's People's Political Consultative Conference removed three leaders from top defense industry firms, including the chairman of the China Aerospace Science and Technology Corporation, which oversees the development of China's spacecraft and missile programs; the chairman of Norinco Group, a leading military equipment manufacturer; and the deputy manager of state-owned China Aerospace Science and Industry Corporation.[31] On June 27, 2024, the Politburo announced that China's previous two ministers of national defense, Li Shangfu and Wei Fenghe, had both been investigated for corruption, found guilty of several serious violations related to corruption and Party discipline,

*For more on the PLA Rocket Force leadership removed in the summer and fall of 2023, see U.S.-China Economic and Security Review Commission, Chapter 1, Section 2, "U.S.-China Security and Foreign Affairs," in *2023 Annual Report to Congress*, November 2023.

and expelled from the Party.*[32] The revolving door of leadership created by Xi's purges could potentially impact PLA readiness, and the heavy representation of the PLA Rocket Force—which manages China's missile arsenal, including nuclear missiles—and the CMC Equipment Development Department among purged officials makes this risk particularly salient for China's strategic nuclear and missile forces.[33]

A wide range of civilian officials were also investigated and disciplined throughout 2024, including central and local officials and leaders from the sectors Xi identified in his January 2024 speech to the CCDI. For example, a large number of state regulators, bankers, and senior financial executives were detained in the first five months of 2024 for ostensibly corruption-related charges.[34] In July and August 2024, several local officials, an official from China's Ministry of Emergency Management, and at least three officials from transportation SOEs were placed under disciplinary investigation.[35] In other cases, officials who had previously been expelled from the Party were later indicted, tried, or sentenced to life in prison for bribery or embezzlement.[36] (For additional details on anticorruption and discipline inspection cases involving civilian officials, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.") Also in July 2024, the CCP Central Committee announced that it had accepted the "resignation" of Qin Gang, a high-ranking official and then Central Committee member who had been stripped of his government posts in 2023 amid reports that he had engaged in an extramarital affair in the United States.†[37]

China Elevates New Warfighting Domains under the CMC

In April 2024, the PLA announced a major reorganization that elevated the importance of space, cyber, and information capabilities and placed all three under the more direct control of the top leadership. The announcement came as a surprise to PLA experts outside of China and could have been undertaken for a variety of operational or political reasons.[38] The reorganization included disbanding the PLA Strategic Support Force—which had previously held responsibility for space, cyber, and information domains—and restructuring

*Former Minister Li, who had spent decades of his career in the equipment department that overseas military procurement, was criticized for "seriously pollut[ing] the political ecology of the military equipment field and the atmosphere of the industrial domain" through his corruption, while former Minister Wei was accused of seriously polluting the force in general. The announcements also included discussion of political loyalty, with Li accused of having "lost his Party spirit and principles" and a statement that Wei's "faith [had] collapsed and his loyalty was lost." Both leaders were criticized for having "caused great damage to the Party's cause, national defense and military construction, as well as the image of senior leaders" through their actions. Jun Mai and Liu Zhen, "In a First, China Accuses Former Defense Ministers Li Shangfu and Wei Fenghe of Corruption," *South China Morning Post*, June 27, 2024; *Xinhua Daily Telegraph*, "Li Shangfu, Wei Fenghe Receive Punishment of Expulsion from the Party" (李尚福,魏凤和受到开除党籍处分), June 28, 2024. Translation.

†Qin Gang disappeared from public view in June 2023, and China's Ministry of Foreign Affairs originally claimed that his absence was for "health reasons." He was removed from his position of Minister of Foreign Affairs in July 2023 and from his position of State Councilor in October 2023. According to reporting by the *Wall Street Journal* in July 2023, senior Chinese officials were reportedly informed that he had engaged in an extramarital affair leading to the birth of a child in the United States. Sylvie Zhuang, "China's Ex-Foreign Minister Qin Gang Stripped of Last Remaining State Title," *South China Morning Post*, October 24, 2023; Lingling Wei, "China's Former Foreign Minister Ousted after Alleged Affair, Senior Officials Told," *Wall Street Journal*, September 19, 2023; Lingling Wei, "China Tries to Reassure U.S. amid Speculation around Missing Foreign Minister," *Wall Street Journal*, July 19, 2023.

it into three separate forces: the Military Aerospace Force, the Cyberspace Force, and the Information Support Force.[39] Prior to the reorganization, the Strategic Support Force was commanded at the theater grade level* directly under the CMC, while its component parts responsible for space, cyber, and information operations were commanded at lower levels.[40] As a result of the reorganization, the three new forces are now each directly subordinate to the CMC and are commanded at the deputy theater grade level,† similar to the PLA Joint Logistics Support Force.[41] The change also established a new distinction between four PLA "services"—the PLA Army, Navy, Air Force, and Rocket Force—which are organized mainly around the traditional domains of land, sea, and air—and four PLA "arms"—the PLA Military Aerospace Force, Cyberspace Force, Information Support Force, and Joint Logistics Support Force—whose operations support military activities across traditional domains.[42] Joel Wuthnow, senior research fellow at the U.S. National Defense University, assesses that the new structure would "help break down silos in the PLA and improve the functioning of the joint operations systems" because theater commanders would now be able to more easily tap into the support forces' assets without the complication of dealing with higher headquarters (which was the case when such assets were consolidated under the co-equal Strategic Support Force).[43] (For an overview of the structural changes, see Figure 1 below.) The Information Support Force is likely to handle network information system, communications support, and network defense tasks.‡[44] (For more on the PLA's views on the importance of information in warfare, see Chapter 8, "China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies.")

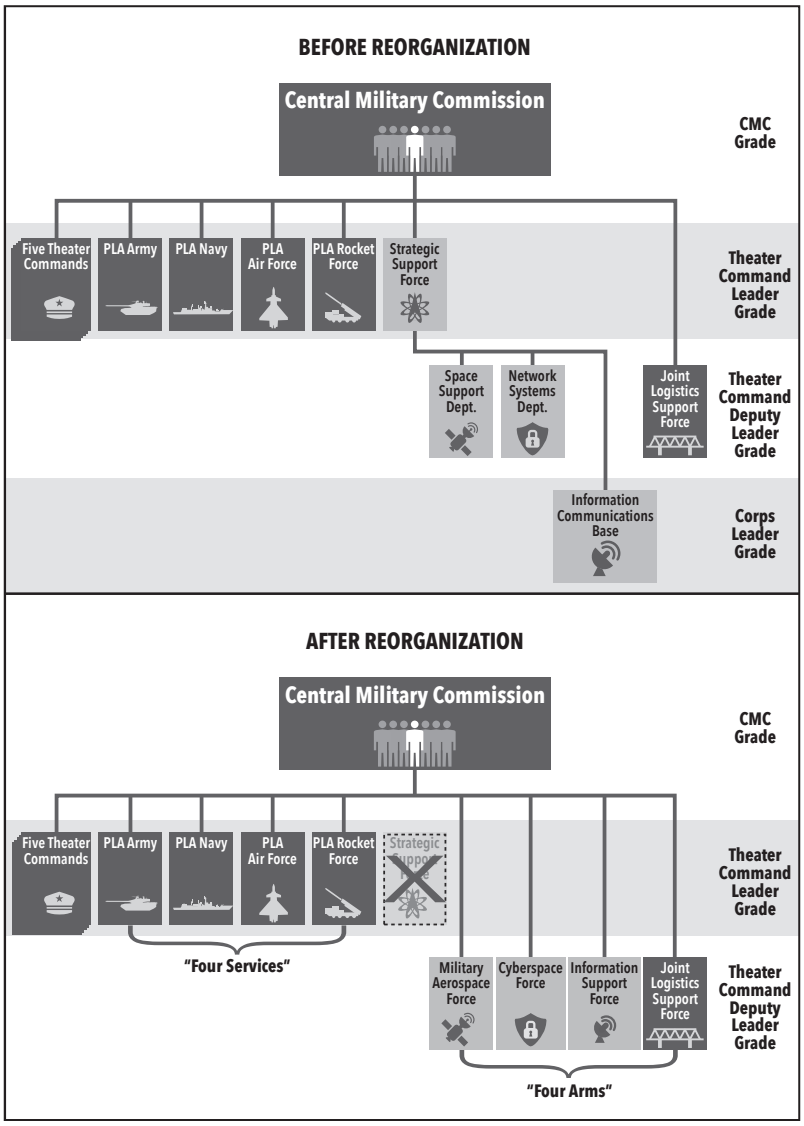
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*Officers at the theater command grade typically hold the rank of general or lieutenant general. A Theater Command leader's rank is a three-star flag officer equivalent to a U.S. four-star flag officer. Ken Allen, Independent Consultant, China Military Analyst, interview with Commission staff, August 28, 2024; Joel Wuthnow and Phillip C. Saunders, "A New Step Forward in PLA Professionalization," *Jamestown Foundation*, March 15, 2021.

†Officers at the deputy theater command grade typically hold the rank of lieutenant general or major general. A Deputy Theater Command Leader's rank is a two-star or one-star flag officer equivalent to a U.S. three-star or two-star flag officer respectively. Ken Allen, Independent Consultant, China Military Analyst, interview with Commission staff, August 28, 2024; Joel Wuthnow and Phillip C. Saunders, "A New Step Forward in PLA Professionalization," *Jamestown Foundation*, March 15, 2021.

‡In a speech at the ceremony establishing the Information Support Force, Xi said the new arm that would strengthen the PLA has an "important position and heavy responsibility" in promoting the development of the PLA and supporting the PLA's efforts to "wi[n] modern wars." An April commentary published in the *PLA Daily* claimed the Information Support Force would "improve [China's] army's joint combat capabilities and all-domain combat capabilities," help achieve the PLA's centenary goal, and facilitate its transformation into a world-class military. According to J. Michael Dahm, senior resident fellow for Aerospace and China Studies at the Mitchell Institute for Aerospace Studies, "Empowering the new deputy theater-grade Information Support Force to strengthen and harden information network capabilities may be the PLA's response to similar U.S. DOD efforts to consolidate and align US military information networks under the umbrella of Joint All-Domain Command and Control (JADC2)." *Xinhua*, "Founding Ceremony of the Chinese People's Liberation Army Information Support Force Held in Beijing. Xi Jinping Awards Military Flag to the Information Support Force and Delivers a Speech" (中国人民解放军信息支援部队成立大会在京举行 习近平向信息支援部队授予军旗并致训词), *People's Government of the People's Republic of China*, April 19, 2024. Translation; J. Michael Dahm, "A Disturbance in the Force: The Reorganization of People's Liberation Army Command and Elimination of China's Strategic Support Force," *Jamestown Foundation*, April 26, 2024; *PLA Daily*, "PLA Daily Commentator: Strive to Build a Strong Modern Information Support Force" (解放军报评论员: 努力建设一支强大的现代化信息支援部队), April 20, 2024. Translation; People's Government of the People's Republic of China, *Xi Jinping Awards Military Flag to the Information Support Force and Delivers a Speech* (中国人民解放军信息支援部队成立大会在京举行 习近平向信息支援部队授予军旗并致训词), April 19, 2024. Translation; Brian Hart, Bonnie S. Glaser, and Matthew P. Funaiole, "China's 2027 Goal Marks the PLA's Centennial, Not an Expedited Military Modernization," *Jamestown Foundation*, March 26, 2021.

Figure 1: PLA Organizational Structure before and after April 2024 Reorganization



Note: Elements in light gray represent the now-defunct Strategic Support Force, its component parts, and their successor organizations post-reorganization. The PLA's five Theater Commands are the Eastern Theater Command, Southern Theater Command, Western Theater Command, Northern Theater Command, and Central Theater Command. CMC members typically hold the rank of general; Theater Command-grade officers typically hold the rank of general or lieutenant general; Deputy Theater Command-grade officers typically hold the rank of lieutenant general or major general; Corps-grade officers typically hold the rank of lieutenant general or major general.[45] Theater Command commanders are joint commanders.[46]

Source: Adapted from Frank Miller, Tung Ho, and Kenneth Allen, eds., "People's Liberation Army Strategic Support Force: A Post-Mortem Analysis," in *The People's Liberation Army as Organization*, vol. 3, Exovera LLC, forthcoming; J. Michael Dahm, "A Disturbance in the Force: The Reorganization of People's Liberation Army Command and Elimination of China's Strategic Support Force," *Jamestown Foundation*, April 26, 2024.

China Seeks One-Sided Adjustments in Its Relations with the United States

Relatively civil language and modest promises at the beginning of this year reflected a shared desire by the governments of the United States and China to mitigate the recent deterioration in relations through increased dialogue and cooperation. Nevertheless, while the United States sought incrementalism to improve communication and strengthen cooperation in areas of mutual interest amid the continued reality of strategic competition, China called for the United States to cease viewing it as a competitor and refused to take responsibility for the harmful impacts of its own actions. By mid-2024, China's statements and actions with respect to the Philippines in the South China Sea, Taiwan, and Japan, for example, also showed that Beijing remains willing to pursue dangerous levels of escalation on certain policy issues.

Differing Positions Challenge U.S.-China High-Level Dialogue and Narrow Cooperation Initiatives

In 2024, the United States and China increased high-level diplomatic engagements and pursued certain narrow cooperation objectives, but differing views and underlying objectives continued to surface. In a bilateral summit meeting in November 2023, President Joe Biden and General Secretary Xi discussed a range of issues and agreed to limited cooperation amid ongoing strategic competition.[47] These areas included military communication, countering fentanyl and other drugs, AI, climate change, and people-to-people exchanges.*[48] Xi and Biden held a follow-up conversation by phone in April, 2024.[49] Additional meetings between high-level leaders at the secretary and minister level aimed to continue the dialogue and push for progress in these and other areas, with U.S. Secretary of the Treasury Janet L. Yellen and U.S. Secretary of State Antony J. Blinken meeting counterparts in China in April 2024 and U.S. Secretary of Defense Lloyd Austin meeting China's Minister of National Defense Admiral Dong Jun on the sidelines of the Shangri-La Dialogue in Singapore in May 2024.[50] In addition, U.S. Secretary of Commerce Gina Raimondo held a call with China's Minister of Commerce Wang Wentao in January 2024 to press for the inaugural meeting of the U.S.-China Commercial Issues Working Group.[51] On April 4, 2024, the U.S. Under Secretary of Commerce for International Trade Marisa Lago and China's Vice Minister of Commerce Wang Shouwen held the first meeting of the Commercial Issues Working Group, where the U.S. side addressed concern for cross-border data flows, regulatory transparency, and the growing overcapacity in a range of Chinese industrial sectors.[52] Nevertheless, visible progress in these areas remains limited and in some areas progress continues to be challenged by countervailing trends:

*In addition to these agreements, the two leaders agreed their teams would follow up on their discussions in San Francisco with continued high-level diplomacy and interactions, including visits in both directions and ongoing working-level consultations in key areas, including on commercial, economic, financial, Asia Pacific, arms control and nonproliferation, maritime, export control enforcement, policy planning, agriculture, and disability issues. White House, *Readout of President Joe Biden's Meeting with President Xi Jinping of the People's Republic of China*, November 15, 2023.

- *Military communication:* In November 2023, President Biden and General Secretary Xi agreed to the resumption of high-level military-to-military communication as well as the U.S.-China Defense Policy Coordination Talks, the U.S.-China Military Maritime Consultative Agreement meetings, and telephone conversations between theater commanders.*[53] The subsequent meeting between Secretary Austin and Minister Dong on the sidelines of the Shangri-La Dialogue in May 2024, although limited in scope, did mark a contrast with the previous year in which China's then Minister of National Defense Li Shangfu had refused a U.S. offer to speak and reportedly dismissed even the offer of a handshake.†[54] After years of China ignoring requests to open channels of communication between commanders, on September 9, 2024, U.S. Indo-Pacific Commander Admiral Samuel Paparo held a video teleconference with the PLA's Southern Theater Commander General Wu Yanan.[55] In the meeting Admiral Paparo urged the PLA to reconsider its "dangerous, coercive, and potentially escalatory tactics" in the South China Sea and expressed interest in continued dialogue with other PLA theater commands.‡[56] Between September 14 and 15, 2024, U.S. Deputy Assistant Secretary of Defense for China, Taiwan, and Mongolia Michael Chase met with Deputy Director of the CMC Office for International Military Cooperation Major General Ye Jiang in Beijing for the 18th U.S.-China Defense Policy Coordination Talks.[57] Dr. Chase raised concerns with China's support for Russia's defense industrial base and underscored U.S. commitment to its allies and partners in the Indo-Pacific in light of China's destabilizing actions against lawful Philippine operations.[58]
- *Countering fentanyl and other drugs:* China is one of the major sources of the precursor chemicals used to produce fentanyl, which took the lives of over 74,000 Americans in 2023.[59] In November 2023, President Biden and General Secretary Xi agreed to the resumption of bilateral cooperation to combat the global illicit drug trade, including fentanyl, and to the establishment of a working group for ongoing communication and law enforcement coordination on issues related to countering

*China suspended high-level military-to-military communications in August 2022 in response to then-Speaker of the House Nancy Pelosi's visit to Taiwan. *Reuters*, "China Halts High-Level Military Dialogue with U.S., Suspends Other Cooperation," August 5, 2022.

†Nevertheless, in response to a question about the potential upcoming meeting the day before the event, China's Ministry of National Defense spokesperson stated that although China felt increased communication was important, it also viewed the U.S. side as "the fundamental reason for the ups and downs in the relationship between the two militaries" and accused the United States of "artificially creat[ing] risks of confrontation." These claims ignore the longstanding U.S. efforts to establish better communications with the PLA and the PLA's own tactic of restricting communication access in order to punish the United States for actions it disagrees with. China's Ministry of National Defense, *Transcript of May 2024 Ministry of National Defense Regular Press Conference* (2024年5月国防部例行记者会文字实录), May 30, 2024. Translation; *Reuters*, "China Halts High-Level Military Dialogue with U.S., Suspends Other Cooperation," August 5, 2022; U.S. Taiwan Business Council and the Project 2049 Institute, "Chinese Reactions to Taiwan Arms Sales," March 2012, 24–25.

‡This was the first call or video meeting between the U.S. Indo-Pacific Command and a PLA Theater Commander in years. Admiral Paparo's predecessor Admiral John Aquilino tried for three years and said in March 2023 that China had not responded to his requests to establish communication. Eleanor Watson, "U.S. and Chinese Military Commanders Hold Rare Phone Call to Avoid Miscalculation," *CBS News*, September 10, 2024; Dzirhan Mahadzir, "INDOPACOM: China Has Not Responded to U.S. Attempts to Establish Communication," *USNI News*, March 16, 2023.

fentanyl and other drugs.[60] Also in November 2023, the United States removed sanctions on China's Ministry of Public Security's Institute of Forensic Science,* likely in a bid to elicit further cooperation from Beijing to stem the flow of fentanyl precursor chemicals.[61] On January 30, 2024, the United States and China launched the Counternarcotics Working Group under which Deputy Assistant to the President and Deputy Homeland Security Advisor Jen Daskal led a U.S. interagency delegation to Beijing to coordinate efforts to counter the global manufacturing of illicit synthetic drugs, including fentanyl.[62] During Secretary Yellen's visit to China in April 2024, the two sides launched an exchange to increase cooperation in combating money laundering associated with drug trafficking.[63] In August 2024, China's Ministry of Public Security announced stricter oversight over the production and sale of three chemicals commonly used to make fentanyl, ostensibly as a result of the U.S. decision to remove sanctions in November 2023 and progress made in subsequent working groups.†[64] Serious concerns nevertheless remain that progress on reducing the flow of fentanyl precursors into the United States from China so far has been limited.[65]

- *Artificial intelligence:* In November 2023, President Biden and General Secretary Xi affirmed the need to address the risks of advanced AI systems and improve AI safety through U.S.-China government talks.[66] On May 14, 2024, interagency delegations from the United States and China met in Geneva, Switzerland, to discuss AI risk and safety.[67] The meeting included discussion of issues of common concern but also highlighted areas of remaining difference, including on matters related to the use of AI by China's government.[68] (For more on China's development and use of AI technologies, see Chapter 3, "U.S.-China Competition in Emerging Technologies.")
- *People-to-people exchanges:* In November 2023, President Biden and General Secretary Xi committed to work toward a further increase in scheduled passenger flights in 2024—in parallel with actions to restore full implementation of the U.S.-China air transportation agreement—to support exchanges between the two countries.[69] They also encouraged the expansion of

*On May 22, 2020, the U.S. Department of Commerce placed China's Ministry of Public Security's Institute of Forensic Science, as well as eight other Chinese entities, on the Entity List for being "complicit in human rights violations and abuses committed in China's campaign of repression, mass arbitrary detention, forced labor and high-technology surveillance against Uighurs, ethnic Kazakhs, and other members of Muslim minority groups in the Xinjiang Uighur Autonomous Region (XUAR)." U.S. Department of Commerce, *Commerce Department to Add Nine Chinese Entities Related to Human Rights Abuses in the Xinjiang Uighur Autonomous Region to the Entity List*, May 22, 2020.

†The United States and China are only now beginning to resume the dialogue on this critical issue that China's leadership suspended in retaliation after then Speaker Pelosi's visit to Taiwan in 2022. China first agreed to cooperate with the United States on tackling the spread of fentanyl in 2019. Chinese officials claim the responsibility for the fentanyl crisis stems from U.S. failures to prevent and treat drug addiction, rather than Chinese precursor regulations. Brian Spegele, "China Is Finally Starting to Do Something about the U.S. Fentanyl Crisis," *Wall Street Journal*, July 4, 2024; Sharp China, "A Conversation with Rep. Raja Krishnamoorthi on TikTok, Tech Investment, and Competition between the U.S. and China," June 26, 2024; Ricardo Barrios, Susan V. Lawrence, and Liana W. Rosen, "China Primer: Illicit Fentanyl and China's Role," *Congressional Research Service*, IF10890, February 20, 2024; *Reuters*, "China, US to Cooperate on Fentanyl, Beijing Hopes for 'Positive Energy,'" January 30, 2024; *Reuters*, "China Halts High-Level Military Dialogue with U.S., Suspends Other Cooperation," August 5, 2022; U.S. Drug Enforcement Administration, *DEA Intelligence Report: Fentanyl Flow to the United States*, January 2020.

educational, student, youth, cultural, sports, and business exchanges.[70] In the first half of 2024, China's Party-state media and speeches by China's diplomatic officials to U.S. audiences portrayed deepening people-to-people exchanges as a necessary component of "stable development of U.S.-China relations" and an area of overwhelming opportunity for both sides.[71] Nevertheless, evidence suggests that even during that time, China's government was pursuing a more one-sided set of exchanges by restricting access to its own society. In June 2024, U.S. Ambassador to China Nicholas Burns stated in an interview that China's government has been actively working to undermine people-to-people ties within China by interrogating and intimidating citizens who attended or sought to attend U.S.-organized events in China* and by increasing restrictions on the U.S. Embassy's social media posts.[72] As he stated in his remarks, "They say they're in favor of reconnecting our two populations, but they're taking dramatic steps to make it impossible."[73] Rather than addressing the allegations, a spokesperson from China's Ministry of Foreign Affairs rejected them outright and insisted that Ambassador Burns' remarks "deviate from the important consensus reached by the two leaders" and "are not in line with the proper way for China and the U.S. to coexist."[74]

Strategic Disputes Continue to Shape U.S.-China Relations

Despite efforts to enhance dialogue and explore possibilities for cooperation, deep strategic disputes continued to play a dominant role in defining the tenor of U.S.-China interactions. This trend was apparent from the time of the November 2023 summit itself. China's Ministry of Foreign Affairs readout stated the summit "should be a new starting point for stabilizing China-U.S. relations" while also including language strongly suggesting a belief that the United States was predisposed to "cling to the zero-sum mentality, provoke rivalry and confrontation, and drive the world toward turmoil and division."[75] After the summit, China's official media continued to portray the meeting as a stabilizer of an otherwise plummeting relationship while placing all of the blame for its necessity on the United States.[76] In the two leaders' April 2024 phone call, Xi stated that although the relationship was "beginning to stabilize," "negative factors" had also been "growing," and he criticized the United States for not changing its longstanding policy positions on key issues.[77] Throughout 2024, China's leaders, diplomats, and Party-state media used the language of the November 2023 meeting to criticize significant U.S. policy positions and encourage or demand alternative policies that would benefit China:

- *Strategic Perceptions:* China's leadership insisted that the United States should change its strategic assessment of China and cease treating it as a competitor. The readout of the November 2023 meeting from China's Ministry of Foreign Affairs listed "five pillars" China wishes the U.S.-China relationship to re-

*At the time of the interview, Ambassador Burns reported that since the previous November he had counted 61 public events for which China's Ministry of State Security or other government bodies had pressured Chinese citizens not to attend or had attempted to intimidate those who attended. Jonathan Cheng, "In Rare Rebuke, U.S. Ambassador Accuses China of Undermining Diplomacy," *Wall Street Journal*, June 25, 2024.

flect, with the first being "developing a right perception."[78] In his remarks at a dinner in San Francisco during this same trip, Xi elaborated on this position by insisting that "to regard China, which insists on peaceful development, as a threat and to engage in zero-sum game… is to go in the wrong direction."[79] In November 2023 and January 2024, respectively, both Xi and Liu Jianchao, head of the CCP's International Liaison Department, claimed that China "has no intention" of "challenging" or "replacing" the United States, with the latter adding that China also "does not seek to change the current international order."[80] Some Party-state media commentaries adopted a less diplomatic approach, arguing forcefully that the United States' "wrong" perception of China inspires it to pursue containment and will bring only a negative future for the relationship.*[81] China's approach ignores the differing interests and values underpinning U.S. policy and China's own longstanding pursuit of strategic competition with the United States.[82] It also ignores Xi's detailed efforts to reshape the international order to better suit China's interests.[83]

- *Taiwan:* Efforts to increase dialogue did not result in any change to China and the United States' differing positions on Taiwan. According to China's readout of the November 2023 meeting, Xi called Taiwan "the most important and most sensitive issue in China-U.S. relations" and stated that the United States should support unification between the two sides, meaning on Beijing's terms.[84] Chinese state media summaries discussing the impact of the November 2023 summit on U.S.-China relations also continued to invoke Taiwan as a serious issue that remained unaddressed from Beijing's perspective.[85] In his April 2024 phone call with President Biden, General Secretary Xi labeled Taiwan as "the first red line that must not be crossed in China-U.S. relations" and warned that "China is not going to sit on its hands" if the United States continued what it argued amounted to supporting Taiwan independence.[86] Secretary Austin met with Minister Dong on May 31, 2024, following the inauguration of Taiwan's President Lai Tsing-te, where Minister Dong intensified China's rhetoric regarding U.S.-Taiwan relations and called on the United States to "correct its errors" and to refrain from "aiding independence by force."[87] In a demonstration of its resolve not to compromise, on July 17, 2024, China declared

*For example, a *China Daily* editorial in January 2024 accused the United States of trying "every means to contain China's rise and development" because it holds a "wrong perception of China," classifying China as a "major competitor" and even viewing China as a "threat." For the sake of building a "stable and sustainable" relationship, it then exhorted the United States to "establish a correct perception of China [and] avoid misjudgments." A Xinhua commentary in March attributed strained relations in recent years primarily to an incorrect "strategic perception" of China by some in the United States and argued that correcting these strategic perceptions must be the issue of first importance between them. More explicitly, it described the elimination of the United States' "seriously erroneous perception of China" as a "prerequisite" for the two countries' positive mutual coexistence, and it warned that continuing to view China as a competitor would lead to increased "confrontation" and even a "new Cold War." *China Daily*, "He Pingli: Strengthen Communication Prevent Misjudgments, Promote Positive Development of China-U.S. Relations" (和评理｜加强交流避免误判 推动中美关系向好发展), January 12, 2024. Translation; *Xinhua*, "Xinhua Commentary | Establish a Correct Strategic Perception—One of a Series of Commentaries on Promoting the Sustained, Stable, and Healthy Development of China-U.S. Relations" (新华时评｜树立正确战略认知——推动中美关系持续稳定健康向前发展系列评论之一), March 28, 2024. Translation.

the suspension of arms control and nonproliferation talks with the United States over U.S. weapons sales to Taiwan, claiming that "responsibility for this situation lies entirely with the U.S."[88] (For more on China's actions related to Taiwan in 2024, see Chapter 9, "Taiwan.")

- *Trade, science, and technology:* In November 2023, Xi framed U.S. export controls, investment screening, and sanctions as a key concern for China and an effort to "deprive the Chinese people of their right to development," completely ignoring expressed concerns about China's unfair economic practices, punitive actions against U.S. firms, and the use of U.S. technologies to endanger U.S. national security.[89] China's readout of the leaders' April 2024 phone call repeated this framing, accused the United States of "creating risks," and declared that "China is not going to sit back and watch."[90] China's state-backed media and diplomats speaking to audiences in the United States also pressed for the reversal of U.S. trade, science, and technology restrictions on China—especially the "small yard and high fence" concept and efforts to counteract negative impacts of China's overcapacity—framing them as "strategic containment" and "overstretching the concept of national security" without acknowledging the role of China's own behavior in bringing them about or China's own increasingly broad concept of national security.[91] (For more on science and technology, see Chapter 3, "U.S. China Competition in Emerging Technologies." For more on economic competition, see Chapter 6, "Key Economic Strategies for Leveling the U.S.-China Playing Field." For more on the wide range of policy issues Xi advocates as being included in "national security," see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.")
- *South China Sea:* China's longstanding and aggressive behavior in the South China Sea became an increasingly salient issue throughout the year as China took escalatory actions that contravened international law and threatened the security of a U.S. treaty ally. Although disagreements over the South China Sea were not mentioned as a key issue in the November 2023 summit meeting, they did feature as negative examples in China's state media summaries of U.S-China relations in January and February 2024.[92] Xi also reportedly raised China's position on the South China Sea in the phone call between the two leaders in April 2024.[93] China continuously escalated its actions against Philippine vessels throughout the spring and early summer, repeatedly threatening their security and personnel and edging dangerously close to a threshold of violence that could trigger U.S. defense commitments to the Philippines under the allies' mutual defense treaty.* (For more on China's harassment of and violence toward the Philippines in the South China Sea,

*In their mutual defense treaty, the United States and the Philippines commit to act to meet common dangers in the event of an armed attack against either party in the Pacific, which includes an attack on either state's public vessels, aircraft, or armed forces (including coast guards) anywhere in the South China Sea. U.S. Department of Defense, *FACT SHEET: U.S.-Philippines Bilateral Defense Guidelines*, May 3, 2023; Avalon Project at the Yale Law School, "Mutual Defense Treaty between the United States and the Republic of the Philippines; August 30, 1951"; U.S. Department of State, *U.S. Collective Defense Arrangements*.

see "China's Violence toward the Philippines Escalates" later in this chapter.) During this time, China's Ministry of Foreign Affairs nevertheless denied any wrongdoing and falsely accused the United States of providing backing for other countries to infringe upon China's sovereignty.[94]

Risks to U.S. Critical Infrastructure from China

The United States and allied countries increased their attention to countering China's threats to critical infrastructure.* In February 2024, the U.S. Cybersecurity and Infrastructure Security Agency (CISA) released a joint risk advisory with three other U.S. government agencies and the national cybersecurity centers of Australia, Canada, New Zealand, and the United Kingdom (UK), providing new information about the 2023 cyberattack on U.S. critical infrastructure by the Chinese state-sponsored cyber group Volt Typhoon.†[95] In March 2024, the U.S. Department of the Treasury announced the imposition of sanctions on a China-based Ministry of State Security front company that has served as cover for multiple malicious cyber operations against U.S. critical infrastructure.[96] Speaking at the Vanderbilt Summit on Modern Conflict and Emerging Threats in Nashville, Tennessee, on April 18, 2024, Director of the U.S. Federal Bureau of Investigation Christopher Wray raised concerns about China's targeting of U.S. critical infrastructure, which he described as "both broad and unrelenting."[97] He placed a particular emphasis on China's use of cyberattacks to "pre-position" capabilities that could be exploited in a conflict scenario.[98] On April 30, 2024, the U.S. government released a National Security Memorandum from the leadership of a wide range of executive branch agencies, which acknowledged that the United States "faces an era of strategic competition with nation-state actors who target American critical infrastructure and tolerate or enable malicious actions conducted by non-state actors."[99] The memorandum reflected an interdepartmental effort to define policy principles and objectives for protecting U.S. critical infrastructure, assign associated roles and responsibilities within the U.S. Federal Government, and develop a common risk assessment framework.‡[100] On June 20, 2024, the

*Critical infrastructure comprises the physical and virtual assets and systems so vital to the nation that their incapacity or destruction would have a debilitating impact on national security, national economic security, or national public health or safety. China has become a global leader in using technologies and applications to improve infrastructure and government services under "smart cities" initiatives, designed to combine "embedded sensors, metering devices, cameras, and other monitoring technologies with big data processing and artificial intelligence (AI) analyses" to manage city infrastructure and public spaces. White House, *National Security Memorandum on Critical Infrastructure Security and Resilience*, April 30, 2024; Katherine Atha, et al., "China's Smart Cities Development," *SOS International* (prepared for the U.S.-China Economic and Security Review Commission), April 29, 2020, 1.

†In 2023, Microsoft Threat Intelligence released additional information on Volt Typhoon's campaign to develop capabilities that could disrupt critical communications infrastructure between the United States and the Indo-Pacific region during future crises. Volt Typhoon has been active since mid-2021 and targeted critical infrastructure organizations in Guam and the United States, affecting organizations across the communications, manufacturing, utility, transportation, information technology, maritime, construction, government, and education sectors. Microsoft Threat Intelligence, "Volt Typhoon Targets US Critical Infrastructure with Living-Off-The-Land Techniques," May 24, 2023.

‡It also formally identified 16 sectors as critical infrastructure sectors, including chemical; commercial facilities; communications; critical manufacturing; dams; defense industrial base; emergency services; energy; financial services; food and agriculture; government services and

Risks to U.S. Critical Infrastructure from China—*Continued*

Secretary of Homeland Security outlined new strategic guidance for critical infrastructure security and resilience efforts by federal agencies, critical infrastructure owners and operators, and other government and private stakeholders, listing "addressing cyber and other threats" from China as a priority.[101] In July 2024, the Australian Signals Directorate, along with U.S. government agencies and national cybersecurity centers and intelligence service from the UK, Canada, New Zealand, Germany, the Republic of Korea, and Japan,* released additional details of malicious cyber operations conducted by APT-40 on behalf of China's Ministry of State Security that pose threats to government and private sector networks in the Indo-Pacific region.†[102]

China's Foreign Policy Aims to Temper Risk and Expand Opportunities

In 2024, China stepped up its ongoing efforts to build international support for its own leadership and to prevent other countries from pursuing policies harmful to its interests. With a particular emphasis on the low- and middle-income countries of what China now calls the "Global South," officials from across the Party-state's foreign policy apparatus—from Ministry of Foreign Affairs diplomats and CCP International Liaison Department officials‡ to PLA representatives conducting military diplomacy§—promoted China's supposedly beneficial global leadership in opposition to what it portrayed as the harmful international actions of the United States and its allies. In its diplomatic engagements, China highlighted self-declared contributions to solving global challenges, even in areas where its interlocutors did not share the same view of China's actions. China's overtures appeared to find willing cooperation from

facilities; healthcare and public health; information technology; nuclear reactors, materials, and waste; transportation systems; and water and wastewater systems. White House, *National Security Memorandum on Critical Infrastructure Security and Resilience*, April 30, 2024.

*The advisory was authored by Australian Signals Directorate's Australian Cyber Security Centre (ASD's ACSC), the United States Cybersecurity and Infrastructure Security Agency (CISA), the United States National Security Agency (NSA), the United States Federal Bureau of Investigation (FBI), the United Kingdom National Cyber Security Centre (NCSC-UK), the Canadian Centre for Cyber Security (CCCS), the New Zealand National Cyber Security Centre (NCSC-NZ), the German Federal Intelligence Service (BND) and Federal Office for the Protection of the Constitution (BfV), the Republic of Korea's National Intelligence Service (NIS) and NIS' National Cyber Security Center, and Japan's National Center of Incident Readiness and Strategy for Cybersecurity (NISC) and National Police Agency (NPA). It outlined a People's Republic of China (PRC) state-sponsored cyber group and their current threat to Australian networks. U.S. Cybersecurity and Infrastructure Security Agency, *People's Republic of China (PRC) Ministry of State Security APT40 Tradecraft in Action*, July 8, 2024.

†The Chinese state-sponsored actor is alleged to utilize tradecraft that compromises devices, including small-office/home-office devices, as a launching point to attack or further exploit vulnerabilities on broader government and private sector networks. U.S. Cybersecurity and Infrastructure Security Agency, *People's Republic of China (PRC) Ministry of State Security APT40 Tradecraft in Action*, July 8, 2024.

‡For more on the CCP's International Liaison Department and its role in overseas influence operations, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, "Battling for Overseas Hearts and Minds: China's United Front and Propaganda Work," in *2023 Annual Report to Congress*, November 2023.

§For more on how the PLA uses military diplomacy to pursue foreign policy objectives, see U.S.-China Economic and Security Review Commission, Chapter 4, Section 1, "China's Relations with Foreign Militaries," in *2023 Annual Report to Congress*, November 2023.

the governments of some countries such as Cambodia and certain Pacific Island states, while others continued to view China's policies as self-serving.

China's Diplomacy Adopts the Term "Global South"

China has long pursued ties with low- and middle-income countries in Africa, Latin America and the Caribbean, the Middle East, and parts of Asia to advance its political agenda, secure economic benefits, push for greater influence in global governance, and counter the strength of U.S. alliances and diplomatic partnerships.[103] China has pursued these ties through bilateral agreements, multilateral groupings such as the intergovernmental organization BRICS (Brazil, Russia, India, China, South Africa), and China-led regional fora such as the Forum for China-Africa Cooperation (FOCAC), China-Community of Latin American and Caribbean States (China-CELAC) Cooperation, and China-Arab States Cooperation Forum (CASCF).[104] Expanding such ties has served as a focus of China's global foreign policy campaigns such as the Belt and Road Initiative (BRI) and Xi's three global initiatives—the Global Development Initiative, Global Security Initiative, and Global Civilization Initiative.[105]

China's leadership has recently embraced the term "Global South"* as a rhetorical tool in its longstanding diplomatic efforts to further these relationships and use them in strategic competition against the United States. In the latter half of 2023 and in 2024, Chinese official† and academic sources increasingly began to replace or supplement the term "developing countries" with the term "Global South" in discussions of China's diplomacy with the relevant countries.[106] By 2024, China's officials and Party-state media had thoroughly incorporated the term into pre-existing discourse about its foreign policy, attempting to use this affiliation to convince other countries to side with it against the United States.[107] For example, China's longstanding assertion that it—unlike the United States—shares the values and objectives of "developing countries" because it itself is a "developing country"‡ are now supplemented or replaced with assertions that it does so because it is a "member" of the "Global South."§[108]

*The term "Global South" is thought to have emerged in academic analysis in 1969 as a rough equivalent to the concept of the "Third World." It gained prominence in 1980 through the report of a commission established by the president of the World Bank to make recommendations on reducing international economic disparities. Steward Patrick and Alexandra Huggins, "The Term 'Global South' Is Surging. It Should Be Retired," *Carnegie Endowment for International Peace*, August 15, 2023; Sarwar Hossain, "'Third World' of 'Global South'? It's Time to Redefine," *South Asia Monitor*, December 26, 2022; World Bank Group, "Brandt Commission Releases Report."; Centre for Global Negotiations, "The Brandt Equation: 21st Century Blueprint for the New Global Economy."

†High-level Chinese officials, including, Xi began to use the term "Global South" in the latter half of 2023. Kawashima Shin, "How China Defines the 'Global South,'" *Diplomat*, January 11, 2024; Economist, "China Wants to Be the Leader of the Global South," September 21, 2023; Ted Anthony, "China, at UN, Presents Itself as a Member of the Global South as Alternative to a Western Model," *AP News*, September 21, 2023; *Xinhua*, "Xinhua Commentary: The Global South Shares a Common Destiny" (新华时评: "全球南方"同呼吸共命运), August 23, 2023. Translation.

‡China's self-designated status as a developing country was also useful in the context of WTO rules that provide special benefits and reduced obligations for developing country members. Mark A. Green, "China Still Gets 'Developing Nation' Preferential Treatment," *Wilson Center*, June 20, 2023; World Trade Organization, "Who Are the Developing Countries in the WTO?"

§Some Chinese academics—including an author affiliated with a research institution under China's Ministry of State Security—argued in late 2023 that the United States sought to deny

China's Diplomacy Adopts the Term "Global South"—*Continued*

Although China's government has not explicitly stated its motivation for adopting the term "Global South," there are multiple reasons why doing so may serve China's interests. First, the term is increasingly used by international organizations and groups (such as the UN, the World Bank, BRICS, and the Group of 77), by think tanks, media, and academia, and by national leaders, and China's leadership may see adopting it as a way to facilitate promotion of its priorities internationally.[109] Second, the growing popularity of the term resonates with some audiences* as an expression of post-colonial and developing country solidarity and further elevating the voices of low- and middle-income countries in global governance—both themes that China has sought to leverage as justification for its international leadership and to undercut the image of the United States.[110] Third, despite the Chinese government's insistence that China "will always belong among developing countries," the World Bank has classified China as an upper middle economy since 2011 and the UN Development Program also classifies China as an upper middle income country.[111] China's leadership likely views the term "Global South" as a tool to reframe and preserve its international status despite the increasing difficulty of justifying its entitlement to special economic treatment as a "developing country."† [112]

China Frames Its Diplomacy in Opposition to U.S. and Allied Objectives

China's diplomacy in 2024 reflected CCP objectives to leverage its perceived international influence against the United States and its allies and partners. These objectives were laid out at the CCP's December 2023 Central Foreign Affairs Work Conference,‡ which as-

China membership in the "Global South" in order to disrupt its relations with developing countries as part of strategic competition against China. Li Yan, "Where Did the Term 'Global South' Originate?" *China-US Focus*, September 21, 2023; Zhao Minghao, "The Global South, the Global East, and U.S.-China Rivalry," *China-US Focus*, August 22, 2023.

*Critics of the term "Global South" and its recent resurgence argue that the term geographically is inaccurate or that it risks reinforcing stereotypes by grouping together countries with a wide range of economic and political conditions and differing interests. The practice of classifying countries as "developing" versus "developed" has also been critiqued for implying a linear standard of technological progress with a Western standard as its endpoint, with the World Bank announcing in 2015 that it would begin to phase out use of this terminology. Erica Hogan and Stewart Patrick, "A Closer Look at the Global South," *Carnegie Endowment for International Peace*, May 20, 2024; Danile Gerszon Mahler, Alaka Holla, and Umar Serajuddin, "Time to Stop Referring to the "Developing World," *World Bank Blogs*, January 23, 2024; David Rising, "Everyone's Talking about the Global South. But What Is It? *AP News*, September 7, 2023; Steward Patrick and Alexandra Huggins, "The Term 'Global South' Is Surging. It Should Be Retired," *Carnegie Endowment*, August 15, 2023.

†Although the report that popularized the term categorized developing countries as being located largely in the southern hemisphere and developed countries as being located largely in the northern hemisphere, it included China within the remit of the "Global South." The report included a visual depiction of the north-south divide in per-capita gross domestic product (GDP) in what became known as the "Brandt Line," which ran across northern border of Mexico, Africa, the Middle East, India, and China and encompasses most of East Asia while avoiding Japan, Australia, and New Zealand. David Rising, "Everyone's Talking about the Global South. But What Is It? *AP News*, September 7, 2023; Steward Patrick and Alexandra Huggins, "The Term 'Global South' Is Surging. It Should Be Retired," *Carnegie Endowment for International Peace*, August 15, 2023; Share the World's Resources, "The Brandt Report: A Summary," January 31, 2006.

‡A CCP Central Foreign Affairs Work Conference is a major periodic meeting that serves as a strategic guide for the conduct and coordination of China's foreign affairs. This was the third such

sessed that China has new strategic opportunities in part because it has strengthened its "strategic autonomy and initiative" over the past decade and increased its international influence.[113] At the same time, official summaries revealed concern about the policy adjustments countries around the world are making to mitigate China's challenges to their own economic and security interests. The readout of the conference in *People's Daily* argues that China must "resolutely oppose" forces it labeled "anti-globalization," "pan-securitization," "unilateralism," and "protectionism," most likely referring to measures such as trade restrictions, export controls, and international sanctions by countries including the United States and many European states.[114] Top Party diplomat Wang Yi, who also serves as China's Minister of Foreign Affairs, echoed these concerns on January 9, 2024, when he repackaged the conclusions of the CCP conference into a Ministry of Foreign Affairs presentation on China's diplomatic goals for 2024, pledging "to firmly oppose all forms of unilateralism, protectionism and anti-globalization" and to "maintain the stability and smoothness of global industrial chains and supply chains."[115] He also stated that China opposes "small circles that seek geopolitical purposes and small blocs that undermine stability," referring to closer coordination between the United States and its allies in Europe and Asia to address risks from China as well as the U.S. alliance system more generally.[116]

The Central Foreign Affairs Work Conference presaged an even stronger focus on influencing other countries to align their policy choices with China's preferences, especially through attempted persuasion and narrative control. Reinforcing the idea that the CCP's objectives are both global and competitive with those of the United States and its partners, official descriptions of the conference argued that China has an imperative to "unite the majority of the international community" and "unite to win the majority of the world."[117] In support of this goal, the Central Foreign Affairs Work Conference sought to codify an equivalence between China's interests and the interests and challenges of the world, especially those of low- and middle-income countries. It anointed Xi's concept of a "community of common human destiny" as the "main line" of China's diplomacy in the future and promoted it as reflecting not only China's objectives but also the interests and desires of all of humanity.[118] The conference also put forward two phrases—"equal and orderly multipolarization" and "beneficial and inclusive economic globalization"—as proposed solutions to the "major issues and challenges facing the world."[119] Although designed to present a positive framing, these

meeting since General Secretary Xi took power in 2012. The meeting codified both a retrospective assessment of the major achievements the CCP claims to have made in its diplomacy under Xi's tenure as well as forward-looking principles for the conduct of China's foreign affairs in the future. Neil Thomas, "Xi Signals Firm Strategy but Flexible Tactics at China's Central Foreign Affairs Work Conference," *Asia Society Policy Institute*, April 16, 2024; *People's Daily*, "Central Foreign Affairs Work Conference Held in Beijing: Xi Jinping Delivered an Important Speech. Zhao Leji, Wang Huning, Cai Qi, Ding Xuexiang, Li Xi and Han Zheng Attended the Meeting" (中央外事工作会议在北京举行: 习近平发表重要讲话 李强主持 赵乐际王沪宁蔡奇丁薛祥李希韩正出席会议), December 29, 2023. Translation; *Xinhua*, "Xi Jinping: Strive to Create a New Situation in China's Major Power Diplomacy with Chinese Characteristics" (习近平: 努力开创中国特色大国外交新局面), June 23, 2018. Translation; *Xinhua*, "Xi Jinping Attends the Central Foreign Affairs Work Conference and Delivers an Important Speech" (习近平出席中央外事工作会议并发表重要讲话), November 29, 2014. Translation.

concepts are monikers for the reversal of actions taken by the United States and its allies to protect their interests in competition with China. As Minister Wang clarified in an elaboration on the conclusions of the conference in the Party journal *Qiushi* in January 2024, "equal and orderly multipolarization" was conceived in opposition to what the CCP calls "hegemony and power politics," while "beneficial and inclusive economic globalization" stands in opposition to so-called "protectionism," "unilateralism," and "anti-globalization."[120]

Throughout 2024, China's political, diplomatic, and military representatives used multilateral meetings as platforms to sell messages from the Central Foreign Affairs Work Conference. At the Boao Forum for Asia in March 2024, Politburo Member Zhao Leji argued that the international community must choose between China's positive approach—represented by Xi's concept of a "community of common human destiny" and its vision of an "equal and orderly multipolar world"—and a negative approach featuring economic restrictions and outdated "bloc confrontation."[121] At the Shanghai Cooperation Organization (SCO) Minister's Council in May 2024, Minister Wang argued that China would work with the SCO to promote "equal and orderly world multipolarization and inclusive economic globalization," and he criticized "a few countries" for promoting "small circles" and advocating "decoupl[ing]."[122] Without offering any evidence, he even claimed that these countries are working to "fuel the 'three evil forces'"—terrorism, separatism, and extremism.[123] In remarks at the Shangri-La Dialogue in June 2024, Minister of National Defense Admiral Dong Jun presented China as a constructive force for the world and stated that Xi's community of common human destiny and three global initiatives constituted China's "Global Security Concept."[124] Minister Dong also stated China's opposition to what he called other countries' "attempts at decoupling, cutting supply chains, or building a small yard with high fences" and attempts to "create conflict and chaos" in the Asia-Pacific region, and China's state media later openly confirmed that the latter comment was targeted at the United States and its allies.[125] At an international conference China hosted to mark the 70th anniversary of the Five Principles of Peaceful Coexistence in June 2024, Xi declared his "vision" of a community of common human destiny as the modern embodiment of those principles and rigorously promoted his three major global initiatives.[126]

In a continuation and intensification of China's longstanding efforts to use low- and middle- income countries as a counterbalance for the United States, China's leaders in 2024 sought to generate diplomatic support by claiming that China's foreign policy reflects the wishes and interests of the "Global South." In a *Qiushi* article in March 2024, Head of the International Liaison Department Liu Jianchao, argued that the "Global South" was "an important force" and "strong support" for these two concepts of "equal and orderly multipolarization" and "beneficial and inclusive economic globalization" introduced at the Central Foreign Affairs Work Conference.[127] He claimed the "Global South" did not support "small yards high fences," "decoupling and breaking chains," "confrontation between camps," "unilateralism," or "protectionism."[128] He also promoted

Xi's global initiatives as solutions for the development challenges facing these countries."* [129] In his own speech marking the 70th anniversary of the Five Principles of Peaceful Coexistence in late June 2024, Xi stated that the "Global South" should "take the lead" in building a community of common human destiny and implementing his global initiatives.[130] He announced the establishment of a "Global South research center" to provide 1,000 scholarships and 100,000 training opportunities for "Global South" countries over the next five years, the establishment of a "Global South youth leaders program," and a stated interest in concluding new free trade agreements with "Global South" countries.[131]

China Advances Strategic Relations and Support for Russia while Presenting Itself as an Advocate of Peace in Ukraine

In the face of mounting criticism from Western governments, China continued to deepen its strategic partnership with Russia as both countries agreed to develop greater cooperation and coordination to counter U.S. and allied policies, including efforts in the Indo-Pacific region and support for Russia's war of aggression in Ukraine. During Russian President Vladimir Putin's state visit to Beijing in May 2024, the two countries signed a Joint Statement that expressed an alignment between Russia and China on shared grievances against the United States and its allies and other areas of convergence, including the following:[132]

- Both countries agreed to strengthen their coordination and cooperation in response to U.S. and allied military activities in the Asia Pacific, which China and Russia regard as hostile policies of "dual containment."[133]
- China and Russia expressed shared concern on threats to their security, such as the United States' missile defense capabilities and its plans to deploy land-based intermediate range missile systems in the Asia Pacific.[134] The Joint Statement further blamed the United States Indo-Pacific Strategy and NATO activities for negatively impacting peace and stability in the region.[135]
- Russia also joined China in expressing serious concern about the Australia, UK, and U.S. (AUKUS) partnership, and both countries raised opposition to the "intervention of external forces in the South China Sea."[136]
- Both countries criticized the United States and its allies' policies toward North Korea, calling on them to "abandon [policies of] intimidation, sanctions and suppression" without holding North Korea accountable for continued missile tests.[137]
- China and Russia agreed to expand bilateral trade and investment and to jointly secure their respective industrial supply chain.[138]

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*Many of these countries are nevertheless heavily indebted to China. Daniel F. Runde, Rafael Romeu, and Austin Hardman, "Reintroducing Concessional Loans into the Development Toolbox," *Center for Strategic and International Studies*, August 20, 2024; Michael Schuman, "Why China Won't Win the Global South," *Atlantic Council*, October 16, 2023; Bernard Condon, "China's Loans Pushing World's Poorest Countries to Brink of Collapse," *AP News*, May 18, 2023.

- China and Russia agreed to deepen military cooperation by expanding the scale of joint exercises and training, organizing more regular joint maritime and air patrols, and continuing to improve their ability to respond jointly to risks and challenges.[139] In 2024, China and Russia have continued to conduct joint exercises. In July, China and Russia's navies participated in a bilateral joint exercise titled Joint Sea-2024, which began at China's southern military port in Zhanjiang and included anti-missile exercises, sea strikes, and air defense drills.[140] In the second week of September 2024, China and Russia coordinated on a large-scale naval exercise called Ocean-2024 reportedly spanning Pacific and Arctic waters, the Mediterranean Sea, the Caspian Sea, and the Baltic Sea.[141] Later in September 2024, the two militaries launched a joint naval and air exercise in the Seas of Japan and Okhotsk that reportedly included anti-aircraft and anti-submarine weapons.[142]
- On Taiwan, Russia stated its adherence to the One China principle, recognized Taiwan as "an inseparable part of the People's Republic of China," and "firmly" supported China's measures to pursue unification.[143]

Nonetheless, there are areas of potential friction in the China-Russia relationship.[144] The power asymmetry between Russia and China has increasingly shifted in China's favor since Russia's annexation of Crimea in 2014, resulting in an uncomfortable reality for Russia whereby Moscow is now viewed as the "junior partner" in the bilateral relationship.[145] China has attempted to influence Moscow's decision making. In July 2023, the *Financial Times* reported that General Secretary Xi personally warned Russian President Putin against using nuclear weapons in Ukraine, and Chinese officials privately took credit for convincing Russia to back down from Putin's veiled threats.[146] Zhao Tong, senior fellow at the Carnegie Endowment for International Peace, assesses that while "China supports the goal of undermining Western influence, it does not agree with some of Russia's tactics [in Ukraine], including the threat of using nuclear weapons."[147] While Russia is focused on its war in Ukraine, China also has an opportunity to expand its influence in areas where interests have historically overlapped, such as in Central Asia and the Artic region.[148] Another point of potential friction is the terms of a deal on a Russia-China gas pipeline called the Power of Siberia 2, which is owned by Russia's state gas export monopoly Gazprom and is intended to link the Chinese market through Mongolia to gas fields in western Russia that previously supplied Europe.[149] According to the *Financial Times*, Beijing is asking to pay close to Russia's subsidized domestic prices and is only committing to buy a small fraction of the pipeline's annual capacity—demands Moscow views as unreasonable.[150] A mutually acceptable deal on the pipeline was reportedly one of three requests President Putin made to Xi when the two leaders met in May 2024.*[151] Russia's continued failure to obtain terms it views as acceptable displays the leverage China

*According to the *Financial Times*, Putin's other two requests were more Chinese bank activity in Russia and for China to snub the peace conference that was organized by Ukraine and held in Switzerland in June 2024. Max Seddon et al., "Russia-China Gas Pipeline Deal Stalls over Beijing's Price Demands," *Financial Times*, June 2, 2024.

holds over Russia, and this dynamic of dependency is likely to deepen in the future.[152]

China's diplomatic and economic support to Russia has been a decisive enabler of Russia's war of aggression against Ukraine.[153] In expanding its trade with Russia, China has helped rebuild Russia's defense industrial base and mitigate the effects of Western sanctions and export controls.[154] In testimony to the U.S. Senate Committee on Armed Services on May 2, 2024, U.S. Director of National Intelligence Avril Haines said that while China has not provided lethal support to Russia in the form of a "fully constructed gun or weapon system," China has provided dual-use materials that have been vital for the "reconstitution of Russia's military strength."[155] During comments made to reporters in Brussels in September 2024, U.S. Deputy Secretary of State Kurt Campbell assessed China has made substantial efforts to "sustain, build, and diversify" Russia's war machine.[156] He stated that the component pieces China has provided "are not dual-use capabilities," rather they directly help Russia's military.[157] He further stated that in exchange for China's support, Moscow has been helping Beijing develop submarine, aeronautic, and missile technologies.[158] Despite overwhelming evidence, China's Ministry of Foreign Affairs has continued to reject claims that its activities support Russia's war effort, stating on June 19, 2024 that, "China does not provide weapons to the parties to the conflict and strictly controls the export of dual-use articles."[159] Other new developments in 2024 include:

- An April 2024 report by the *Financial Times* cited senior U.S. officials saying "China had also supplied 90 percent of chips imported by Russia last year which were being used to make tanks, missiles, and aircraft."[160] The U.S. officials note that several Chinese companies such as Wuhan Global Sensor Technology, Wuhan Tongsheng Technology, and Hikvision provided optical components in Russian tanks and armored vehicles.[161]
- On May 1, 2024, the U.S. Department of State designated several Chinese entities that were found responsible for developing and supplying dual-use aerospace, manufacturing, and technology equipment to entities based in Russia.[162] As an example, one of the Chinese entities included Mornsun Guangzhou Science and Technology Co LTD, which supplied electronic integral monolithic circuits to a Russia-based entity that specializes in the production and marketing of airborne weapons control radars for Russian fighter aircraft.[163]
- On June 12, 2024, the Treasury Department issued new sanctions on entities that support Russia's war economy and military-industrial base.[164] As one example, Treasury sanctioned the China-based Shenzhen Youxin Technology Co Ltd (Shenzhen Youxin), which was said to have provided electronic integrated circuits and other components to Russia-based distributor Elekkom Logistik, which supplies Russia's defense industry with foreign-made electronic components used in the production of unmanned aerial vehicles (UAVs).[165] Shenzhen Youxin also provided microchips found in Russian reconnaissance UAVs.[166]

- On September 24, 2024, Ukraine's presidential advisor Vladyslav Vlasiuk told reporters that roughly 60 percent of foreign-made components found in Russian weapons recovered from the battlefield in Ukraine come from China.[167]
- In 2024, the U.S. Department of Commerce placed numerous Chinese entities on the Entity List for supporting Russia's military. For example, on April 11, 2024, Jiangxi Xintuo Enterprise Co. Ltd., was added to the Entity List for "supporting Russia's military through the procurement, development, and proliferation" of Russian UAVs.[168] On May 14, Commerce added six additional Chinese entities to the Entity List for being involved in the shipment of controlled items to Russia.[169] On August 23, 2024, Commerce added 42 entities in China, including Hong Kong, for shipping U.S.-origin and U.S.-branded items to Russia, contravening U.S. export controls.[170]

China's Ukraine Peace Diplomacy Falls Short in Europe, Echoes Russia's Views

In March 2024, China made a show of conducting so-called "shuttle diplomacy"* between Russia, Ukraine, and European countries, but—not surprisingly—efforts by a country in a self-described "no limits" partnership with the aggressor country have not produced any tangible result.[171] From March 2 to 11, 2024, China's Special Representative of the Chinese Government for Eurasian Affairs Li Hui visited Russia, the EU headquarters in Brussels, Poland, Ukraine, Germany, and France to promote a political settlement of the war in Ukraine.[172] These meetings, although highly praised in China's own Party-state media, appeared to culminate in a single briefing in Beijing for domestic and foreign media and the diplomatic envoys stationed in China.[173]

China continues to advocate for a political and diplomatic settlement to the war with Ukraine that Moscow has endorsed.† [174] During discussions between Li Hui and EU representatives, it was reported that Li Hui presented a repetition of Moscow's talking points.[175] According to officials familiar with the talks, Li Hui reportedly told EU officials that discussion on Ukraine's territorial integrity would not take place until violence stopped, which he said could only happen when the EU stops sending weapons to Ukraine.[176] The impression Li Hui reportedly left on officials in Brussels was that China simply sought to create the illusion of good faith efforts to end Russia's war in Ukraine—when in reality the move was likely intended to

*The term "shuttle diplomacy" refers to negotiations especially between countries carried on by an intermediary who goes back and forth between disputants. China's Ministry of Foreign Affairs refers to these activities as its "second round of shuttle diplomacy on the Ukraine crisis." The so-called first round occurred in May 2023. China's Ministry of Foreign Affairs, *Special Representative of the Chinese Government on Eurasian Affairs Li Hui Holds Briefing on the Second Round of Shuttle Diplomacy on the Ukraine Crisis*, March 22, 2024; Rakshith Shetty, "China's Shuttle Diplomacy with Ukraine and Russia: All Symbol, No Substance," *Diplomat*, March 2, 2024; China's Embassy in Iceland, *Foreign Ministry Spokesperson Mao Ning's Regular Press Conference on May 29, 2023*, March 29, 2023.

†According to Russia's Ministry of Foreign Affairs, during Li Hui's meeting with the Russian Deputy Foreign Minister Mikhail Galuzin on March 2 in Moscow, both sides discussed the issue that "a settlement in Ukraine is impossible without the participation of Russia and taking into account its security interests." *TASS*, "Russian and Chinese Diplomats Noted That Discussing a Settlement in Ukraine Is Impossible without the Russian Federation" (Дипломаты РФ и КНР отметили, что обсуждение урегулирования на Украине невозможно без РФ), March 3, 2024. Translation.

mitigate risks to its own interests as a result of its support for Russia.[177] Li Hui also used his meetings with EU officials to condemn the EU's sanctions—released on February 23, 2024—on three Chinese firms and one Hong Kong-based company due to their role in trading electronic components of EU-origin products to Russia.[178] In a readout of meetings published by China's Ministry of Foreign Affairs, Li Hui urged the EU to unconditionally cancel the listing of Chinese enterprises and return to the "right track" of consultation with China.[179]

Despite China's vocal claims that it has "stayed committed to promoting peace talks and played a positive role in efforts to restore peace," Beijing declined to participate in the Swiss peace summit on Ukraine from June 15 to 16, 2024.[180] China's Ministry of Foreign Affairs spokesperson said the Swiss peace summit failed to incorporate three elements proposed by China: recognition from both Russia and Ukraine, equal participation of all parties, and fair discussion of all peace plans.[181] Instead, China offered a proposal for peace negotiations jointly developed with Brazil in May 2024.*[182] Russia has indicated its support for China's proposal, with Russia's Foreign Minister Sergei Lavrov indicating that China should consider arranging a peace conference in which both Russia and Ukraine would participate.[183] Minister Lavrov said in an interview with *RIA*, a Russian state-owned news agency, that Russia shares China's position that "root causes of the conflict need to be addressed in the first place and legal interests of all parties need to be protected."[184] Finally, undermining Ukraine's attempts to build international consensus on its approach to resolve the conflict, China increased diplomatic outreach to other global leaders in Turkey, Egypt, Saudi Arabia, the United Arab Emirates, South Africa, Indonesia, and Kazakhstan in a so-called "third round of shuttle diplomacy" to build support for China's Russian-approved peace proposals.[185]

China Pushes Europe to View It as a Partner, with Mixed Results

China intensified its European diplomacy in 2024 in an effort to offset European criticism of its support for Ukraine and to discourage closer coordination of U.S. and European policies on trade and other issues, hoping to maintain access to the economic and political benefits that close ties with European countries can provide. In his presentation at the start of the year on China's diplomatic goals for 2024, Minister Wang described China's major objective for its European diplomacy as "increas[ing] high-level exchanges and strategic communication with the EU to promote the steady and sustained

*China and Brazil's joint proposal for peace negotiations with the participation of Russia and Ukraine called for the following six points: (1) All relevant parties observe three principles for deescalating the situation, namely no expansion of the battlefield, no escalation of fighting, and no provocation by any party; (2) All parties should create conditions for the resumption of direct dialogue and push for the de-escalation of the situation. China and Brazil support an international peace conference held at a proper time that is recognized by both Russia and Ukraine, with equal participation of all parties as well as fair discussion of all peace plans; (3) Efforts are needed to increase humanitarian assistance, attacks on civilians and civilian facilities must be avoided, and prisoners of war (POWs) must be protected. China and Brazil support the exchange of POWs; (4) The use of weapons of mass destruction, particularly nuclear weapons and chemical and biological weapons, must be opposed; (5) Attacks on nuclear power plants and other peaceful nuclear facilities must be opposed; and (6) Dividing the world into isolated political or economic groups should be opposed. Government of Brazil, *Brazil and China Present Joint Proposal for Peace Negotiations with the Participation of Russia and Ukraine*, May 23, 2024.

growth of their relations."[186] Xi pursued this objective in a summit with the EU and a high-profile tour of several European countries, although the mainly positive messages China reported from those meetings present a contrast with the two sides' deepening disagreements over Ukraine,* electric vehicles (EVs), and other economic issues. (For more on China's economic tensions with Europe in 2024, see Chapter 1, "U.S.-China Economic and Trade Relations (Year in Review).")

During a leaders' meeting with European Commission President Ursula von der Leyen in December 2023, General Secretary Xi argued that Europe should overlook its differences with China in favor of deeper cooperation.[187] Xi endeavored to challenge European arguments for competition or rivalry between China and the EU, including by downplaying the relevance of its authoritarian political system.[188] He attempted to paint China as a critical strategic partner for the EU on economic and trade issues, on science and technology, and on industrial supply chains.[189] Xi further claimed that China and the EU have a responsibility to cooperate on geopolitical matters, but he did so while invoking China's own geopolitical priorities† and attempting to discourage EU cooperation with the United States.‡[190] Throughout 2024, China's diplomats continued to argue that European governments should adhere to Xi's desired pattern of prioritizing partnership over differences.§[191]

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*In June 2024, the EU imposed sanctions on 19 Chinese companies for being involved in the "circumvention of trade restrictions and engaged in the procurement of sensitive item," such as the production of drones, or "providing material support for Russian military operations. *France 24*, "EU Hits 19 Chinese Firms with Sanctions over Links to Russian War Effort," June 25, 2024; *Reuters*, "China Urges EU to Revoke Sanctions on Chinese Firms over Russian Links," June 25, 2024; European Council, *Russia's War of Aggression against Ukraine: Comprehensive EU's 14th Package of Sanctions Cracks Down on Circumvention and Adopts Energy Measures*, June 24, 2024.

†Xi framed his desired partnership state as "two major forces promoting multipolarization," "two major markets supporting globalization," and "two major civilizations advocating diversity." This terminology echoes the Central Foreign Affairs Work Conference call for China to promote "equal and orderly multipolarization" and "inclusive and beneficial economic globalization." *Xinhua*, "First Observation | Why Xi Jinping Emphasizes the 'Strategic Significance' and 'World Impact' of China-EU Relations" (第一观察丨习近平主席为何强调中欧关系"战略意义"和"世界影响"), December 8, 2023. Translation; *People's Daily*, "Central Foreign Affairs Work Conference Held in Beijing: Xi Jinping Delivered an Important Speech. Zhao Leji, Wang Huning, Cai Qi, Ding Xuexiang, Li Xi and Han Zheng Attended the Meeting" (中央外事工作会议在北京举行：习近平发表重要讲话 李强主持 赵乐际王沪宁蔡奇丁薛祥李希韩正出席会议), December 29, 2023. Translation.

‡Xi argued that if China and Europe focus on dialogue and cooperation, then "camp confrontation will not form." *Xinhua*, "First Observation | Why Xi Jinping Emphasizes the 'Strategic Significance' and 'World Impact' of China-EU Relations" (第一观察丨习近平主席为何强调中欧关系"战略意义"和"世界影响"), December 8, 2023. Translation.

§At China's NPC in March 2024, Minister Wang insisted that China-Europe cooperation could forestall the development of "bloc confrontation" and "anti-globalization," and he expressed frustration at the EU's three-fold view of China as simultaneously a partner, competitor, and systemic rival. Later in March, China's Consul General in Strasbourg, France, delivered a speech describing China and Europe as two major geopolitical forces advancing "multipolarization" and "globalization," repeating both Xi's framing on China-Europe relations and the overall objectives of China's diplomacy laid out at the Central Foreign Affairs Work Conference. He expressed "regret" at what he called "discordant voices" promoting the EU's partner-competitor-rival characterization of China and openly blamed the United States for having inspired the "rival" aspect. Consulate-General of the People's Republic of China in Strasbourg, *Full Text of the Keynote Speech by Consul General Pan Yumin at the European Circle Association's "China-EU Relations" Theme Exchange Meeting, "China Is a Reliable Partner of France and Europe, and Win-Win Cooperation Is the Key to a Better Future"* (潘旻旻总领事在欧洲圈协会"中欧关系"主题交流会上的主旨发言《中国是法国也是欧洲可信赖的伙伴，合作共赢才是美好未来》全文), March 22, 2024. Translation; *Xinhua*, "China Vows to be Staunch Force for Peace, Stability, Progress," *State Council of the People's Republic of China*, March 8, 2024; Li Yi, "Wang Yi: As Long as China and Europe Cooperate for Mutual Benefit, There will be No Confrontation between the Two Camps" (王毅：只要中欧互利合作，阵营对抗就搞不起来), March 7, 2024. Translation; *People's Daily*, "Central Foreign Affairs Work Conference Held in Beijing: Xi Jinping Delivered an Important Speech. Zhao Leji, Wang Huning, Cai Qi, Ding Xuexiang, Li Xi and Han Zheng Attended the Meeting" (中央外事工作会

Xi also traveled to Europe in April 2024 in an effort to reinforce his message.[192] Many Western analysts observed that Xi's itinerary of France, Serbia, and Hungary featured what could be viewed as China's stronger relationships in Europe, an argument that Party media also confirmed from Beijing's perspective.*[193] Outcomes of the trip for China were mixed, however, cementing China's already strong diplomatic position in Serbia and Hungary but also casting remaining differences with France and the EU into sharper relief:

- *France:* Ahead of the visit, Minister Wang reportedly told French President Emmanuel Macron's diplomatic advisor that he hoped Paris could push the EU to pursue a more pragmatic policy toward China.[194] Nevertheless, in a trilateral meeting with General Secretary Xi in Paris, President Macron and European Commission President von der Leyen reportedly emphasized China's responsibility to resolve structural economic difficulties, particularly related to trade and its export of overcapacity in new energy products, while China's readout suggests Xi took the contrasting position, claiming that "the so-called 'problem of China's overcapacity' does not exist."[195] Reporting also suggests the two European leaders pushed Xi on China's continued support for Russia's war in Ukraine, a discussion that China's readout omits in favor of a regurgitation of official talking points and self-congratulatory language about China's supposed contributions to ending the conflict.[196] Although short on details, some French media coverage suggests that "several hours" of bilateral talks between Macron and Xi may not have gone entirely as planned for either side, with certain topics such as climate change, human rights, Taiwan, and the South China Sea having "eclipsed" other issues.[197]
- *Serbia:* In a victory for Beijing's agenda, Serbia expressed an official commitment to Xi's concept of a "community of common human destiny" and agreed to establish a "China-Serbia community of common destiny," with Serbia's President Aleksandar Vucic describing it as "the highest possible form of cooperation between two countries."[198] President Vucic also reiterated support for Beijing's One China principle, referred to tensions

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议在北京举行: 习近平发表重要讲话 李强主持 赵乐际王沪宁蔡奇丁薛祥李希韩正出席会议), December 29, 2023. Translation; *Xinhua*, "First Observation | Why Xi Jinping Emphasizes the 'Strategic Significance' and 'World Impact' of China-EU Relations" (第一观察丨习近平主席为何强调中欧关系"战略意义"和"世界影响"), December 8, 2023. Translation.

*For example, the same *People's Daily* article in *Qiushi* argues that China-France relations have always been "at the forefront of China's relations with Western countries" and attributes their recent ability to "maintain good development momentum" to a shared spirit of "independence." This is likely referencing French President Emmanuel Macron's willingness to publicly take positions that differ from those of the United States on certain issues of China policy and France's emphasis on the European concept of "strategic autonomy," a policy concept emphasizing the agency of European powers that China has attempted to push European governments to interpret to mean distancing themselves from policies that challenge China's interests and refraining from coordination with the United States over such policies. The article states that China and Serbia "have a deep ironclad friendship" that "can be regarded as a model of friendly relations between China and European countries." It describes Hungary as an important BRI partner that has "insisted on… eliminating interference and pressure and firmly deepening cooperation with China" even "under the turbulent international situation"—an approach it argues "strongly proves" that China is an opportunity rather than a challenge to Europe. He Yin, "Promote the Healthy and Stable Development of China-Europe Relations" (促进中欧关系健康稳定发展), *People's Daily* in *Qiushi*, May 5, 2024. Translation; U.S.-China Economic and Security Review Commission, *2023 Annual Report to Congress*, November 2023, 526, 550, 528–529; Elizabeth Koch, "European Strategic Autonomy after Macron's Trip to China," *Wilson Center*, May 9, 2023.

across the Strait as China's internal issue, and reportedly drew parallels between Taiwan and Kosovo.[199] Other favorable outcomes for China included a signing ceremony for a free trade agreement on certain agricultural goods and bilateral agreements on cultural and scientific exchanges.*[200]

- *Hungary:* During the visit, China and Hungary declared an elevation of their relationship to "all-weather comprehensive strategic partnership for the new era," which observers view as a step up from the previous "comprehensive strategic partnership" they had established in 2017.†[201] General Secretary Xi and Hungarian Prime Minister Viktor Orbán oversaw the signing of 17 agreements between the two countries.[202] One news outlet reports that they agreed to strengthen high-level exchanges, continue pursuing BRI, and promote deeper cooperation in areas including clean energy, AI, mobile communication technology and nuclear energy, while another lists cooperation in supply chains, culture, media, and other sectors.[203] During the meeting with Xi, Prime Minister Orbán reportedly welcomed more Chinese businesses to invest in Hungary.[204] He also notably distanced Hungary from EU positions, stating that Budapest did not agree with EU's "de-risking" policy or concerns about overcapacity of China's EVs and batteries.[205]

A stream of meetings by the director of the CCP's International Liaison Department with political parties and individual leaders across the continent in the first half of the year also revealed that the Party perceives a very wide range in European governments' willingness to interact on China's terms. In a meeting with a German delegation, Director Liu communicated the CCP's desire for greater "dialogue and cooperation" in strategic relations with Europe broadly and with Germany specifically.[206] When meeting with the ambassador from the Netherlands, he encouraged the country to contribute to promoting "stable" China-Europe relations and to "push the EU to adhere to openness" and "oppose 'de-coupling.'"[207] In a meeting with a Finnish diplomat, Director Liu similarly stated a hope that Finland would "push China-EU relations" toward "stable development."[208] While meeting the Polish ambassador, he called for deepened exchanges and emphasized Poland's importance to China as an EU member with influence in Central and Eastern Europe.[209] To Spain's ambassador, by contrast, Director Liu expressed appreciation for the country's "adherence to a positive and friendly policy toward China," and a readout of the meeting with Slovakia's ambassador focused mainly on promoting BRI and deepening political exchanges.[210] In a party-to-party engagement with representatives from Hungary, Director Liu praised the two countries' "traditional friendship" and mutual support on issues concerning "core interests," argued for compatibility between BRI and Hungary's foreign

China Digital Times reports that 29 agreements were signed in total, promoting legal, regulatory, and economic cooperation. Arthur Kaufman, "Xi's Visits to Serbia and Hungary, Pushing Wedge into Europe," *China Digital Times*, May 10, 2024.

†According to an expert from the Chinese Academy of Social Sciences speaking to China's state media in 2015, the "all-weather" label signifies that China and a country have close relations "regardless of changes in time or global landscape." Other countries with this "all-weather" label include Belarus, Ethiopia, Pakistan, Uzbekistan, and Venezuela. Kelly Wang and Hu Xuan, "China, Hungary Elevates Ties to 'All Weather' Partnership," *Caixin Global*, May 10, 2024.

policy, and promoted expanded exchanges at the local government and enterprise levels.[211] Director Liu's meeting with the ambassador from Belarus—a key Russian partner in Europe but not an EU member—called for deepened exchanges across political, legislative, social, and industrial domains and emphasized the two states' commitment to mutual support for "core interests."[212]

Finally, when European actions did not conform to China's preferred pattern for the relationship, China's proclaimed desire for strategic stability did not prevent it from launching harsh criticisms. On July 11, 2024, Germany announced a new two-step plan to ban the use of critical components made by Huawei and ZTE in core parts of the country's 5G network beginning in 2026.[213] Rejecting the German government's security concerns, China's Ministry of Foreign Affairs framed the policy decision as "politicizing trade and tech issues" and "disrupt[ing] normal exchanges and cooperation in technology."[214] The following day, a spokesperson for China's Ministry of Foreign Affairs criticized the EU for releasing a statement reiterating its support for the conclusion of the legally binding South China Sea arbitration ruling.[215]

NATO Sharpens Its Position on Challenges from China

The United States continued to urge Europe and NATO allies to place increased scrutiny on China's support for Russia's war in Ukraine. During U.S. Deputy Secretary of State Kurt Campbell's visit to Brussels in September 2024, he met with Belgian, NATO, and EU officials and urged more forceful condemnation of China's "substantial support" to Russia's military industrial base and deepening defense cooperation.[216] According to Mr. Campbell, while some countries in the EU and NATO may take differing perspectives, the United States, the EU, and NATO allies are increasingly aligned on policies related to China.[217] At the conclusion of its July 2024 summit in Washington, DC, NATO released a declaration stating the alliance's strongest position to date on challenges from China, reflecting an escalation of concerns about China's irresponsible international behavior. Most notably, the declaration labeled China "a decisive enabler of Russia's war against Ukraine" and stated that China "cannot enable the largest war in Europe in recent history without this negatively impacting its interests and reputation."[218] NATO called on China to "cease all material and political support to Russia's war effort," specifically citing the "transfer of dual-use materials such as weapons components, equipment, and raw materials that serve as inputs for Russia's defense sector."[219] This language represents a significant evolution beyond the communique issued only a year prior at NATO's 2023 summit in Vilnius, Lithuania, which had called upon China to "act responsibly," "play a constructive role," and "abstain from supporting Russia's war effort."[220] Concern about China's "deepening strategic partnership" with Russia and the two countries' "mutually reinforcing efforts" to undercut the rules-based international order was also elevated to a much more prominent section of the document.[221] Aside

NATO Sharpens Its Position on Challenges from China—*Continued*

from Russia and Ukraine, the 2024 declaration maintained attention on previously mentioned concerns about China's "stated ambitions and coercive policies," including China's malicious cyber activities and disinformation, and the expansion of its nuclear arsenal.[222]

China seized upon the occasion of the summit to promote disinformation about NATO and also revealed its own heightened concern about the group's intensifying focus on China's policies.* China's Ministry of Foreign Affairs spokesperson spoke publicly against the alliance on every day of the summit, painting it repeatedly as a serious danger to the world and accusing its members of seeking to "incite confrontation and rivalry."[223] On July 11, 2024 the spokesperson also accused NATO of "spreading disinformation created by the [United States] and blatantly [seeking] to undermine China's relations with Europe," ignoring the agency of the alliance's other members and mischaracterizing the group as an anti-China tool of the United States.[224] After the conclusion of the summit, the spokesperson reacted to a speech by NATO Secretary General Jens Stoltenberg with not only a vociferous denunciation of the remarks themselves, but also ad hominem attacks.[225]

China in the Indo-Pacific: Cooperation and Coercion

China intensified its use of all available tools from persuasion to coercion in its attempt to reshape international norms and policies across the Indo-Pacific. China's aggression in the South China Sea reached new heights as it escalated longstanding harassment of Philippine vessels and personnel within their own EEZ into violent and dangerous clashes. In the Pacific Islands, by contrast, China courted the governments and political parties of both its traditional partners and those of the United States, seeking not only endorsements of its Taiwan policy but also stronger support for China's role as a key economic player in the region and for its authoritarian system.

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*China also spoke out against NATO's growing relationships with countries in the Indo-Pacific, as leaders or deputies from Australia, New Zealand, Japan, and South Korea attended the NATO summit in Washington DC in July 2024. NATO has taken steps to increase coordination with like-minded partners in the Indo-Pacific, having invited Australia, Japan, South Korea, and New Zealand to participate in ministerial-level meetings and NATO summits since December 2020. In 2023, NATO and Japanese officials acknowledged ongoing discussion during Secretary General Stoltenberg's January visit about opening a NATO liaison office in Tokyo and Japanese mission to NATO. By June, however, President Macron had voiced opposition, arguing that NATO should not expand its reach beyond the North Atlantic and signaling that the required consent of all 31 NATO members might not be possible. In response to the reports that NATO was considering opening a liaison office in Tokyo, China criticized the plan when its Foreign Ministry spokesperson Wang Wenbin said Japan should "avoid doing things that could dismantle trust and affect peace and stability in the region." China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Lin Jian's Regular Press Conference on July 11, 2024*, July 11, 2024; Ken Moritsugu, "China Warns NATO Not to Create 'Chaos' in Asia and Rejects Label of 'Enabler' of Russia," *PBS News*, July 11, 2024; Justin McCurry, "France Opposed to Opening of Nato Liaison Office in Japan, Official Says," *Guardian*, June 6, 2023; Demetri Sevastopulo et al., "France Objects to Nato Plan for Office in Tokyo," *Financial Times*, June 5, 2023; *Xinhua*, "China Cautions against Potential NATO Office in Japan," May 12, 2023; Ken Moriyasu, Rieko Miki, and Takashi Tjuji, "NATO to Open Japan Office, Deepening Indo-Pacific Engagement," *Nikkei Asia*, May 3, 2023.

China Ramps Up Pressure on Taiwan's New President

In 2024, China continued to intensify its coercion of Taiwan following the inauguration of Taiwan's new President Lai Ching-te of the ruling Democratic Progressive Party (DPP), whom Beijing has deemed a "separatist."[226] In June, China used "lawfare" tactics to intimidate Taiwan's government and people through the announcement of new guidelines that officially designate "Taiwan independence"—including the denial of Beijing's claim that Taiwan is part of China, the promotion of Taiwan's participation in international organizations, and attempts to change Taiwan's status through legal means in Taiwan—as a crime that is punishable by detention, prison terms ranging from three years to life, confiscation of possessions, and even the death sentence.[227] Beijing also employed economic coercion against Taiwan, announcing in May 2024 that it would suspend some of the preferential trade benefits on 134 products exported from Taiwan, including chemical products, metals, rubbers and plastics, and machinery.[228] Three days after Taiwan's presidential inauguration in May 2024, China conducted a military exercise, Operation Joint Sword 2024A, to demonstrate its operational skills for blockade or invasion.[229] The exercise notably included the China Coast Guard (CCG) and represented an intimidating show of military might in tandem with its increasingly frequent and regular air and naval operations around Taiwan.[230] Beijing also continued diplomatic coercion against Taiwan, for example by making attempts to bully foreign parliamentarians and stop them from attending the Inter-Parliamentary Alliance on China (IPAC)* summit, a global coalition of lawmakers aimed at countering threats from China.[231] (For a more in depth and comprehensive analysis of China's intensified coercion against Taiwan, see Chapter 9, "Taiwan.")

China's Violence toward the Philippines Escalates

China's attempts to block Philippine activities in the South China Sea, especially resupply missions to the Philippine Navy transport ship *Sierra Madre* grounded on the reef near Second Thomas Shoal in the Philippines' EEZ, have escalated. Chinese forces have gone from using water cannons and lasers to ramming vessels and committing other acts of violence, including the use of bladed weapons.†[232] In further attempts to use lawfare to assert China's control over Second Thomas Shoal, Beijing also called on the Philippines to notify China in advance of conducting activities to and from Second Thomas Shoal, a direct violation of the Philippines' rights under international law.[233] These events, which frequently involved aggression by the CCG, maritime militia, and the PLA Navy, suggest Beijing is seeking to establish a new status quo whereby it can control or deny the Philippines' access to an area within the Philippines'

*IPAC seeks to build a global coalition that unites lawmakers worldwide by promoting democracy and addressing threats to the rules-based and human rights systems posed by China. IPAC held its fourth annual summit in Taipei, Taiwan, which was attended by 50 parliamentarians from 23 countries. Inter-Parliamentary Alliance on China, "About"; Helen Davidson, "China Used 'Shocking' Bullying Tactics ahead of Taiwan IPAC Meeting, Organiser Says," *Guardian*, July 30, 2024.

†China's escalating aggression against the Philippines follows a series of steps taken by the United States and the Philippines to strengthen military cooperation. White House, *Fact Sheet: Celebrating the Strength of the U.S.-Philippines Alliance*, April 11, 2024; U.S. Department of Defense, *Philippines, U.S. Announce Locations of Four New EDCA Sites*, April 3, 2023.

own EEZ under the guise of law enforcement activities.[234] China's highly aggressive actions were likely emboldened by a Chinese regulation* that entered into force in June 2024, granting the CCG authority to seize and detain foreign vessels operating within "Chinese jurisdiction"—despite the fact that Second Thomas Shoal does not lie within the lawful jurisdiction of China.[235] Although China and the Philippines agreed to lower tensions following the violent encounters in June 2024 and established a hotline between the two presidential offices to prevent new confrontation from spiraling out of control, none of these efforts have altered Beijing's aggressive behavior in the South China Sea.[236] (For more on Philippine views of China's aggressive actions and on U.S. defense commitments to the Philippines in the South China Sea, see Chapter 8, "China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies.")

- On March 5, 2024, the CCG collided with a Philippine Coast Guard vessel after carrying out "dangerous maneuvers" to block the Philippine Coast Guard vessel from escorting a resupply mission to Second Thomas Shoal.[237] Hours later, two CCG vessels shot water cannons at a Philippine supply boat in the area, reportedly injuring four people onboard and shattering three panes of the boat's windshield.[238] The CCG released a statement blaming the Philippines for the incidents.[239] In remarks to the media in Australia the following day, Philippine President Ferdinand Marcos Jr. expressed alarm at the continuing dangerous maneuvers and actions against the Philippines while clarifying that this incident did not necessitate an invocation of the U.S.-Philippines Mutual Defense Treaty.[240]
- On March 23, 2024, two CCG ships and two militia vessels surrounded a wooden Philippine supply boat on its way to Second Thomas Shoal.[241] The CCG ships reportedly fired water cannons at the boat for almost an hour, injuring three Philippine crew members and disabling the boat.[242] In the following days, the Philippines summoned China's ambassador in Manila to protest the aggressive actions, and the Philippine Embassy in Beijing lodged a demarche with China's Ministry of Foreign Affairs.[243] China's embassy accused the Philippines of "deliberate and provocative" actions that had supposedly "infringed upon China's sovereignty and maritime rights," completely ignoring the legally binding ruling of the 2016 Court of Arbitration Tribunal, which invalidated any Chinese claim to special rights around Second Thomas Shoal.† [244]

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*China's Coast Guard Regulation No. 3 appears to implement the 2021 China Coast Guard Law which contains ambiguous language on the scope of CCG authority to use weapons and its geographic application. In analysis conducted by U.S. INDOPACOM's Joint Operational Law Team, the regulation, which took effect on June 15, 2024, authorizes CCG commanders to detain foreign vessels and persons in "waters under China's jurisdiction" for up to 60 days. USINDOPACOM Joint Operational Law Team, *TOPIC: China Coast Guard Regulation No. 3*, May 30, 2024; China Coast Guard, *China Coast Guard Has Issued the "Regulations on Administrative Law Enforcement Procedures for Coast Guard Agencies"* (中国海警局制定出台《海警机构行政执法程序规定)," May 15, 2024. Translation.

†The tribunal ruled that Second Thomas Shoal is a low-tide elevation—a feature that, in its natural state, is above water only at low tide—and thus incapable of generating any maritime zones (such as a territorial sea, EEZ, or continental shelf) of its own. This categorization, combined with the fact that the feature lies outside the legal territorial sea of any state, means it is not subject to "appropriation" (i.e., claims of "territorial sovereignty") by any state. These rulings

- In April 2024, the Philippines task force on South China Sea issues said the CCG ships had harassed and damaged a Philippine Coast Guard ship and a Philippine fisheries vessel headed to Scarborough Shoal* to assist Filipino fishermen in the area.[245] According to the statement, the CCG ships used water cannons against both of the Philippine vessels and repeatedly rammed the fisheries vessel.[246]
- In May 2024, the CCG attempted to block the Philippine Coast Guard conducting a medical evacuation of a sick member of the country's armed forces from Second Thomas Shoal.[247] The blocking maneuvers reportedly continued despite calls from the Philippine Coast Guard explaining the humanitarian nature of the mission.[248] The Philippine Coast Guard ultimately completed the mission in spite of China's interference, which it described as "barbaric and inhumane."[249]
- On June 17, 2024, CCG ships intercepted Philippine vessels attempting to deliver supplies to Philippine troops stationed at Second Thomas Shoal, instigating a violent encounter that left at least eight Philippine Navy personnel injured.[250] CCG personnel boarded the Philippine vessels, carrying with them bladed weapons, and seized all Philippine firearms they found onboard.[251] They also slashed at Philippine rubber boats, reportedly leaving them in tatters.[252] Philippine personnel who resisted were reportedly left to do so "with their bare hands," and one Filipino servicemember lost his thumb in the confrontation.[253] The violent encounter led to a debate among Western observers about what threshold of force would trigger the U.S.-Philippine mutual defense clause of the 1951 treaty.[254]
- On August 19, 2024, vessels of the CCG and Philippine Coast Guard collided near Sabina Shoal,† causing structural damage

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invalidate any claim of "territorial sovereignty" over the feature (which China claims over all features in the Spratlys) and any claim to maritime zones around it. The tribunal further ruled that Second Thomas Shoal is located fully within the EEZ of the Philippines, thereby granting the Philippines legal right to explore, exploit, conserve, and manage the natural resources in and around the shoal—rights it found China to have violated. The tribunal determined that China's ambiguous claim to "historic rights" in the South China Sea is baseless, as no such historic rights are recognized under the UN Convention on the Law of the Sea (UNCLOS), which China has signed. Additionally, the tribunal clarified that if any of China's ambiguous claims were to amount to a claim over "internal waters" in the area, such claims would also lack any legal basis in UNCLOS. Thus, the only rights that China's vessels are entitled to in the area of Second Thomas Shoal are the standard rights afforded to all foreign vessels within another country's EEZ. USINDOPACOM J06/SJA TACAID Series, *Topic: Sierra Madres, Second Thomas Shoal, and the U.S. Commitment to Defend the Philippines*; U.S.-China Economic and Security Review Commission, Chapter 2, Section 1: "Rule by Law: China's Increasingly Global Legal Reach," in *2023 Annual Report to Congress*, November 2023, 189–190; Permanent Court of Arbitration, *The South China Sea Arbitration (The Republic of The Philippines v. The People's Republic of China)*, July 12, 2016, 8–10.

*The tribunal ruled that Scarborough Shoal is a high-tide feature rightfully classified as a "rock" under UNCLOS, meaning it is entitled to a 12-nautical-mile territorial sea but not to its own EEZ or continental shelf. The tribunal did not have jurisdiction to take a position on which country has sovereignty over the feature itself. The tribunal ruled that the fisherfolk of both countries retain a degree of "traditional fishing rights" in the area that were not extinguished by the adoption of UNCLOS or by the feature's location within the Philippines' EEZ. It further ruled that China had infringed upon the rights of Filipino fishermen by obstructing all fishing by Philippine nationals. Permanent Court of Arbitration, *The South China Sea Arbitration (The Republic of The Philippines v. The People's Republic of China)*, July 12, 2016, 9–10.

†Like nearby Second Thomas Shoal, Sabina Shoal is a low-tide elevation in the Spratlys, well inside the Philippines EEZ and only 86 miles from the Philippine island of Palawan. Rebecca Tan and Lyric Li, "Chinese and Philippine Ships Collide at Sabina Shoal, a New Flash Point," *Washington Post*, August 18, 2024; *Radio Free Asia*, "Manila Accuses Beijing of Island Building in

to the Philippine Coast Guard vessels.[255] According to Philippine National Security Council director general Jonathan Malaya, the first Philippines coast guard vessel sustained a 13-centimeter hole after "aggressive" maneuvers by the CCG.[256] Fifteen minutes later, a second Philippine coast guard ship was reportedly "rammed twice" by a CCG vessel and suffered "minor structural damage."[257] China's Ministry of Foreign Affairs refuted the Philippines' reports, claimed the Philippine coast guard vessels entered "China's territory" without permission from the Chinese government, and accused the Philippine coast guard of "deliberately ramming the China Coast Guard vessel that was carrying out law enforcement operation[s]."[258]

Regional Reactions to China's Violent Behavior

China attempted to justify its violent actions occurring on June 17, 2024 against the Philippines by illegally claiming jurisdiction over the South China Sea, raising concern from countries in the region. China's Ministry of Foreign Affairs continued to act as if China had the ability to enforce its domestic laws within the Philippines' EEZ and blamed the incident on the Philippines, claiming that the CCG "only took necessary control measures against the Philippine vessels."[259] On the day of the June 17, 2024 incident, the spokesperson for the State Department asserted that the United States "stands with its ally the Philippines and condemns the escalatory and irresponsible actions" by China to deny the Philippines its lawful rights.[260] He also reaffirmed that U.S. commitments under the U.S.-Philippines Mutual Defense Treaty apply to armed attacks on Philippine armed forces, public vessels, or aircraft—including those of its coast guard—anywhere in the South China Sea.[261] The Philippine Department of National Defense, Office of the National Security Advisor, and Department of Foreign Affairs released a joint statement on June 24, 2024, stating that the Philippines views the incident "not as a misunderstanding or an accident" but as "a deliberate act of the Chinese officialdom" and "an act of aggressive and illegal use of force" while also noting that the Philippines "continue[s] to find peaceful solutions" to the issue.[262] Japan, South Korea, and Australia have also expressed concerns about China's dangerous behavior in the South China Sea and its aggressive obstruction of Philippine vessels.[263]

Possible Evidence of Chinese Land Reclamation in South China Sea

In May 2024, the Philippines announced it was monitoring Sabina Shoal following signs of suspected Chinese island-building activities on the feature.[264] Like nearby Second Thomas Shoal, Sabina Shoal is a low-tide elevation in the Spratlys, well inside the Philippines EEZ.*[265] The Philippine Coast Guard commodore

South China Sea," May 13, 2024; Permanent Court of Arbitration, *The South China Sea Arbitration (The Republic of The Philippines v. The People's Republic of China)*, July 12, 2016.

*Under UNCLOS, a coastal state has "the exclusive right to construct and to authorize and regulate the construction, operation and use of… artificial islands" in its own EEZ. *Radio Free Asia*, "Manila Accuses Beijing of Island Building in South China Sea," May 13, 2024; Permanent Court of Arbitration, *The South China Sea Arbitration (The Republic of The Philippines v. The*

Possible Evidence of Chinese Land Reclamation in South China Sea—*Continued*

reported that crushed corals had been dumped on the reef, declaring it "highly likely that the maritime features [of Sabina Shoal] were altered" by human activity.[266] According to a statement from the Office of the President of the Philippines, the dumping of the corals represented the very early stages of a suspected artificial island-building effort by China.[267] The Philippines instituted a rotational deployment of coast guard vessels to monitor the shoal, noting the presence of PLA Navy vessels and helicopters, CCG ships, Chinese Maritime Militia vessels, and Chinese research vessels around the shoal at various times.[268] China's Ministry of Foreign Affairs dismissed the reports as "futile" efforts to smear China and "mislead the international community."[269] Not all experts agree on whether the corals indicate an ongoing island-building effort. According to Gregory B. Poling, director of the Southeast Asia program and Asia Maritime Transparency Initiative at the Center for Strategic and International Studies, "There is no evidence in commercially available satellite imagery to suggest any island building or reclamation, with all the sandbars in question remaining the same average size for the last decade or more."[270]

China Gray Zone Operations near Japan Intensify

China has steadily ramped up its pressure on Japan around the Senkaku Islands in the East China Sea, which Japan administers but which China claims as its own territory. On a visit to the East China Sea Command Headquarters of the CCG on November 29, 2023, Xi told the CCG to "resolutely" defend China's sovereignty claims in the area and that China "can only move forward, not backward" on the matter.[271] According to Japanese media reports, the CCG subsequently drafted a plan to maintain a ship presence near the islands every day of 2024.[272] On July 5, 2024, the Japanese Coast Guard spokesman reported that China had sailed near the Japan-administered Senkaku Islands and within Japan's EEZ in the East China Sea for a record 197 consecutive days.*[273]

China's naval presence around the Senkaku Islands and flights near Japanese airspace represented a significant escalation from previous activity. According to the Japanese Coast Guard, in June 2024, three CCG vessels entered within 12 nautical miles of the Senkaku Islands and appeared to be armed with deck-mounted machine guns.[274] Japan's then-Prime Minister Fumio Kishida stated that China's "unilateral attempts to change the status quo are being intensified," calling the situation "a grave concern."[275] Senior level exchanges between the two countries have not impacted the tempo of China's East China Sea activities, as the Japanese Coast Guard detected the four CCG ships a day after then-Prime Minister Kishi-

People's Republic of China), July 12, 2016; United Nations Convention on the Law of the Sea, § 60, 1982.

*China's activities near the Senkakus surpassed the previous record of 157 consecutive days in 2021. *Japan Times*, "Japan Spots Chinese Ships near Senkaku Islands for Record 158 Days," May 27, 2024.

da held his first formal bilateral meeting with China's Premier Li on May 26, 2024.[276] China's military has also begun to utilize UAVs near Japan's territorial airspace, a move without historical precedent.[277] On May 27, 2024, the Japan Air Self-Defense Force observed a PLA reconnaissance and attack drone flying over the East China Sea, north of the southwestern Japanese prefecture of Okinawa.[278] On June 4, 2024, the Air Self-Defense Force scrambled fighter jets to intercept another PLA reconnaissance and attack drone that flew in international airspace near Okinawa.[279] In August 2024, Japan's Defense Ministry said a PLA Y-9 reconnaissance aircraft violated the country's territorial airspace, 12 nautical miles from the coast of Japanese territory on the eastern side of the Danjo Islands in the East China Sea.[280] The PLA continued to ramp up its presence the following month when a Chinese aircraft carrier entered Japan's contiguous zone,* reportedly for the first time, by sailing between the southern Yonaguni and Iriomote islands.[281]

China Expands Persuasion Efforts in the Pacific Islands

China continued and expanded its campaign to persuade Pacific Island states to deepen their reliance on China and adopt Beijing's preferred policies on a range of issues, further increasing concerns that China could seek to use its relationships in the region to constrain U.S. security partnerships.† In November 2023, Special Envoy for Pacific Island Countries Affairs of the Chinese Government Qian Bo visited the Cook Islands to participate in the Pacific Island Forum Leaders Meeting and also took the opportunity to meet bilaterally with national leaders from across the region.[282] In his speech at the forum, Representative Qian continued to advertise China as an economic partner by announcing new development assistance measures and arguing that "Chinese modernization" and "high-quality" BRI cooperation would bring major opportunities for Pacific Island countries.[283] On the sidelines of the forum, he met with Cook Islands Prime Minister, and Chair of the Pacific Islands Forum, Mark Stephen Brown, who reportedly reiterated the government's commitment to Beijing's One China principle.[284] According to reporting by China's Ministry of Foreign Affairs, Representative Qian also met with participating leaders from Fiji, Kiribati, Niue, Samoa, and the Solomon Islands over the course of his stay in the country and conducted "friendly exchanges" with leaders of the Federated States of Micronesia, Papua New Guinea, Tonga, and Vanuatu.[285]

China made new efforts to strengthen its relationship with the political leadership of the Solomon Islands in 2024, seeking to maintain the advantageous position it had enjoyed under outgoing Prime Minister Manasseh Sogavare. In January 2024, Xinhua news agency

*Contiguous zone as defined by the UN is an area that extends up to 24 nautical miles from a country's coastline within which a coastal state "may exercise the control necessary" to "prevent" or "punish" "infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory or territorial sea." *Reuters*, "Japan says Chinese Carrier Entered Its Contiguous Waters for First Time," September 18, 2024; United Nations Convention on the Law of the Sea, § 33, 1982.

†China's pursuit of deepened relations and especially security agreements in the region has generated concern in the past about the leverage it could give China to deny U.S. security access. For example, after signing a security agreement with China in 2022, the government of the Solomon Islands refused to grant permission for routine visits by U.S. and UK vessels in its ports. U.S.-China Economic and Security Review Commission, *2022 Annual Report to Congress*, November 2022, 380–381.

publicized remarks by then Prime Minister Sogavare, then running for reelection,* in which he not only argued that his government had made the right choice in severing diplomatic relations with Taiwan in 2019 but also parroted China's false narrative that UN Resolution 2758 obligated every UN member state to recognize Taiwan as part of China.[286] (For more on China's misrepresentation of UN Resolution 2758, see Chapter 9, "Taiwan.") In early April 2024, Representative Qian visited the Solomon Islands and met with the country's Permanent Secretary of the Ministry of Foreign Affairs and External Trade Collin Beck.[287] In an example of China's use of subnational diplomacy to advance its goals, he also made a dedicated trip to Malaita Province, where he met Premier Martin Fini, visited a community school, and attended the signing ceremony of a memorandum of understanding on establishing a sister province relationship between Malaita and Jiangsu.†[288] Later in April, China's state-backed media seized the opportunity of the Solomon Islands' parliamentary elections to spread false narratives about U.S. foreign policy objectives in the region and about China's supposed commitment to not interfere in other countries' internal affairs while again touting the development opportunities China would bring to the country.[289] Following the election, Solomon Islands lawmakers selected as the new prime minister former Foreign Minister Jeremiah Manele, who pledged to continue the Pacific Island country's international policy of close relations with China.[290] In early July 2024, China invited Prime Minister Manele to meet with General Secretary Xi in Beijing, where they released a joint statement outlining planned future cooperation.[291] Notably, the statement included a commitment by China to continue sending "police liaison teams" to the country, likely indicating continuity of the police cooperation agreement that China signed with the Sogavare government in 2023.[292]

The CCP in 2024 also undertook substantial efforts to deepen political connections in Vanuatu with an emphasis on solidifying support for China on key political issues such as Taiwan. In April and May 2024, International Liaison Department Director Liu held a series of meetings with representatives from Vanuatu's various political parties.[293] In these meetings and other venues, Director Liu promoted China's economic development opportunities and sought support for China's "core interests and major concerns."[294] As a demonstration of one such core interest, readouts from the party-to-party meetings consistently mentioned the commitment of Vanuatu and of each individual political party to Beijing's One China principle, suggesting

*In the runup to the Solomon Islands election, news media reported that incumbent Prime Minister Sogavare unsurprisingly favored closer ties with China, while opposition parties reportedly favored closer ties with Western countries, including Australia, and had even stated that they may scrap or hold a referendum on the security deal that Sogavare's government had signed with China, if elected. *Reuters*, "Explainer: China, Health System Top Issues as Solomon Islands Holds National Election," April 16, 2024; Charley Piringi, "As Solomon Islands' Election Looms, China's Influence on the Pacific Country Draws Scrutiny," *Guardian*, April 14, 2024; Kristy Needham and Lucy Craymer, "Solomon Islands Election Watched by US, China amid Pacific Influence Contest," *Reuters*, April 12, 2024.

†Preexisting sister province relationships between China and the Solomon Islands include between Isabel Province and Shandong Province (established 2023) and between Guadalcanal Province and Guangdong Province (reestablished 2021). According to news coverage of the event by the Solomon Islands government, there were "ongoing discussions" by other provinces interested in establishing similar relationships with China. Solomon Islands Government, *PRC Pacific Envoy Pays Visit to Ministry of Foreign Affairs and External Trade*, April 8, 2024.

Beijing may continue finding support for its Taiwan agenda even if the party in power were to change.*[295] The meeting readouts also referenced "governance experience" and "governance capacity building," suggesting efforts by the CCP to promote its authoritarian practices as it has in the Solomon Islands.[296] Director Liu described China's relations with Vanuatu as "a microcosm of China's relations with Pacific Island countries," suggesting that China's government sees Vanuatu as a willing partner for its objectives in the region.[297] In early July 2024, China completed the construction of a new presidential palace and finance ministry building in Vanuatu, in addition to renovations to Vanuatu's foreign affairs department building.†[298] Shortly thereafter, China invited Prime Minister of Vanuatu Charlot Salwai to meet with General Secretary Xi in Beijing, where the two leaders released a joint statement.[299]

China's efforts in the region seem to be paying off. In 2024, China secured a degree of rhetorical support from its established partners the Solomon Islands and Vanuatu, from Fiji, and from the Federated States of Micronesia, one of the three Pacific Island countries with a Compact of Free Association (COFA) agreement with the United States. (For more on the COFA agreements, see Chapter 8, "China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies.") After separate meetings between Xi and the respective heads of state from these four countries, they released joint statements endorsing a wide range of political and geopolitical priorities for China, including several that are oriented to undercut and discredit the United States and its allies.[300]

- First, each of the four statements included support for China's political priorities and sovereignty claims to some degree. Each described Taiwan as "an inalienable part of China's territory," and all but Fiji opposed "Taiwan independence" and supported efforts by the Chinese government to "realize national reunification."[301] All but Fiji also included mentions of Hong Kong, Xinjiang, and Tibet, with the Federated States of Micronesia and the Solomon Islands additionally stating that they "firmly support" China's position on these issues, and Vanuatu describing them as "internal matters for China to deal with."[302] The Solomon Islands and Vanuatu also mentioned "issues related to…human rights," with the former stating they "firmly support" China's position and Vanuatu again describing human rights as an internal matter for China.[303] Finally, both the Solomon Islands and Vanuatu statements added that their government "fully understands and supports" China's position on the South China Sea.[304]
- Second, each of the four statements endorsed the set of diplomatic slogans China has emphasized in 2024 to contrast its ostensible international leadership with that of the United States.

*Following the Taiwan election, the government of Vanuatu publicly reaffirmed its position that "Taiwan is an integral part of the People's Republic of China's territory" and called on the international community to respect China's supposed sovereignty over Taiwan. *Daily Post*, "Vanuatu Gov't Reaffirms Recognition of 'One China Policy,'" January 16, 2024.

†Some Australian officials expressed concern that the construction project would provide China greater opportunities for surveillance and intelligence gathering in Vanuatu. Leah Lowonbu, "China Hands over Lavish New Presidential Palace to Vanuatu, ahead of PM's Visit to Beijing," *Australian Broadcasting Company*, July 3, 2024.

This included support not only for Xi's community of common human destiny and his three global initiatives but also "equal and orderly multipolar[ization]" and "inclusive economic globalization."[305] All four statements also stated opposition to "hegemonism and power politics," which China attributes to the United States.[306]

- Third, while all four statements reiterated a commitment to upholding the international nuclear non-proliferation regime, the Federated States of Micronesia, the Solomon Islands, and Vanuatu also included additional language on nuclear issues that could be interpreted as a veiled criticism of both Japan's discharge of treated water from the Fukushima power station* and the operation of nuclear-powered submarines by the United States, the UK, and eventually Australia under the AUKUS agreement.†[307] (For more on the AUKUS partnership and the planned pathway for Australia's acquisition of conventionally armed nuclear submarine technology, see Chapter 8, "China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies.")

China Downplays Maritime and Territorial Disputes with Vietnam

Over the past year, China and Vietnam have undertaken wide-ranging cooperation and professed to have constructive political relations, despite the two countries' unresolved territorial-maritime disputes in the South China Sea. In December 2023, General Secretary Xi and General Secretary of the Communist Party of Vietnam Nguyen Phu Trong released a joint statement declaring the establishment of a "China-Vietnam community of common destiny."[308] The joint statement covered a wide range of issues, including strengthened party-to-party ties; greater military exchanges; expanded cooperation on law enforcement, regime security, and intelligence; deepened economic ties; and support for China's global initiatives.[309] It also contained a lengthy section on "better management and settlement of differences" which focused on managing disputes in the South China Sea.[310] Analysts note that the agreement closely followed the upgrade of U.S.-Vietnam relations to a comprehensive strategic partnership three months prior, and Vietnam's officials reportedly characterize the further development of relations with China as a "strategic choice" and part of a "diversified foreign policy."[311] In early April 2024, General Secretary Xi met with Chairman of the National Assembly of Vietnam Vuong Dinh Hue in Beijing and noted that implementation of the agreement was proceeding well from China's perspective.[312] Xi and Prime Minister Pham Minh Chinh then met in Beijing in June 2024, where Xi again stated that cooperation was progressing "smoothly."[313] Prime Minister Chinh reportedly voiced opposition for "the politicization of economic, trade, and technolog-

*The International Atomic Energy Agency confirmed in April 2024 that the discharge of treated water from the power station has proceeded according to accepted standards of protection from harmful radiation, with tritium concentrations in each batch of treated water to date measuring "far below Japan's operational limit." International Atomic Energy Agency, "Japan's ALPS Treated Water Release Is Progressing as Planned, IAEA Task Force Says," April 26, 2024.

†Former special assistant and press secretary to the president in the government of the Federated States of Micronesia, Richard Clark, has called this provision "concerning" and points out that it fails to acknowledge China's own use of nuclear-powered submarines in the region. Richard Clark, "The Trouble with Micronesia's New China Policy," *Diplomat*, April 19, 2024.

ical issues" and claimed that Vietnam's relations with China "will not be disrupted by external provocations and interference."[314]

It is notable that Vietnam has managed to maintain cordial relations with China despite Vietnam's on-going construction in the South China Sea. Vietnam's expansion of its occupied features in the Spratly Islands has gone uncontested this year by China's Navy, Coast Guard, or Maritime Militia, a sharp contrast to Beijing's response to the Philippines activities at Second Thomas Shoal.[315] According to the Asia Maritime Transparency Initiative, between November 2023 and June 7, 2024, Vietnam has created 692 new acres of land across a total of ten features, a significant expansion of its outposts in the Spratly Islands.[316] Vietnam's activities in the South China Sea do not appear to have impacted defense and security cooperation with China. In early December 2023, Minister Wang and Vietnamese Foreign Minister Bui Thanh Son reportedly agreed to "jointly maintain peace and stability at sea."[317] In April 2024, Chinese and Vietnamese coast guards completed a joint patrol in the Beibu Gulf.*[318] According to Chinese state media reporting, an official statement heralds the joint patrol as a model for "maritime law enforcement in the South China Sea" adding that practical cooperation with the Vietnamese to properly handle maritime emergencies will continue.[319] Also in April, the defense ministers of China and Vietnam announced the establishment of a hotline between the Vietnamese Navy and the PLA Southern Theater Command, framing the agreement as part of their efforts to improve maritime cooperation under their community of common destiny.[320]

China's state media used the agreement as an opportunity to contrast Vietnam and the Philippines, arguing that Vietnam had rightly judged that its "common interests [with China] far outweigh [its] differences" whereas the Philippines had chosen a so-called path of "radical actions" and provocation backed by the United States.[321] Western analysts have assessed that Beijing's different approaches towards the Philippines and Vietnam may be influenced by the two countries' different approaches to formal alliances with the United States and publicly shaming China's coercive behavior.[322] China's comparably low-key response to Vietnam's activities in the South China Sea may in part showcase Beijing's preference for countries to bilaterally manage disputes with China privately and publicly demonstrate support and cooperation for China's stated foreign policy objectives.[323]

Nevertheless, in late September 2024, law enforcement authorities from China engaged in a violent altercation with a civilian vessel from Vietnam in the South China Sea. On September 29, 2024, according to Vietnamese accounts, two patrol ships from China's Maritime Safety Administration Sansha City United Law Enforcement Unit were deployed to interdict a Vietnamese fishing vessel near the Paracels.†[324] Local Vietnamese media reported that up to

*The three-day joint patrol included observing and inspecting fishing boats from both countries while patrolling along planned routes. *China Military Online*, "China, Vietnam Coast Guards Complete Joint Patrol in Beibu Gulf," April 30, 2024.

†China, Vietnam, and Taiwan claim sovereignty over the Paracels; however, China effectively controls them and has constructed 20 outposts in the area. In addition to claiming sovereignty over the features themselves, China also maintains a straight baseline claim around them that is inconsistent with international law, illegally claiming the waters between them as China's internal waters. Center for Strategic and International Studies, Asia Maritime Transparency Ini-

40 officers from China's Maritime Safety Administration boarded the Vietnamese civilian fishing vessel with metal rods and attacked ten Vietnamese fishermen, resulting in severe injuries to four fishermen, some of whom suffered broken limbs.[325] China's Ministry of Foreign Affairs defended the actions of China's authorities as "professional and restrained," claiming that "no injuries were found" and the Vietnamese fishing boats were illegally fishing in the relevant waters without the permission of the Beijing government.[326] In response, Vietnam's foreign ministry confirmed the incident, lodged a protest with China's embassy in Vietnam, and asserted that Chinese law enforcement officials did in fact beat Vietnamese fisherman and confiscate their fishing equipment.[327] It remains to be seen whether this incident represents a new trend.

China Deepens Exchanges and Military Access in Cambodia

In 2024, China and Cambodia continued to deepen ties following Cambodia's leadership transition from then-Prime Minister Hun Sen to his son General Hun Manet last August.[328] In April 2024, Minister Wang visited Cambodia and met with high-level leadership including the king, prime minister, deputy prime minister, and senate chairman.[329] The two sides reaffirmed their pursuit of a "China-Cambodia community of common destiny," which they had declared in a joint statement in 2023, and Minister Wang described the arrangement between the two countries as "a model for building a new type of international relations."[330] In addition to expanded cooperation on exports, infrastructure, agriculture, and tourism, the two governments reportedly agreed to deepen exchanges in "state governance," to jointly combat transnational crimes, and to "strengthen defense cooperation" through continued joint exercises and training, medical services cooperation, and mine clearing.[331] They also declared their intention to cooperate under the framework of Xi's Global Development, Security, and Civilization Initiatives.[332] In May 2024, China and Cambodia also held their annual Golden Dragon military exercise* focused on counter-terrorism and humanitarian relief.[333]

China has expanded on its activities at Cambodia's Ream Naval Base by maintaining a consistent PLA Navy presence there since December 2023.†[334] While the Cambodian government has insisted that the presence of the two Chinese Navy corvettes is not "permanent," the two Chinese warships have been the only ships docked at the new Chinese-built pier.[335] The Cambodian Commander of Ream, Mey Dina, told the *New York Times* the

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tiative, "Reading between the Lines: The Next Spratly Legal Dispute," March 21, 2019; Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "China Island Tracker."; Sourabh Gupta and Matt Geraci, "China's Claims in the South China Sea," *Institute for China-American Studies*; National Bureau of Asian Research, "Country Profile from the Maritime Awareness Project: China."

*This is the sixth annual China-Cambodia Golden Dragon joint exercise; the first occurred in December 2016. Wu Ke and Meng Peng, "China-Cambodia "Golden Dragon 2024" Joint Exercise Concludes," *China Military Online*, May 31, 2024; *Associated Press*, "China, Cambodia to Begin Annual Military Drills to Strengthen Cooperation, Fight Terrorism," *Voice of America*, May 13, 2024.

†China's Ministry of National Defense has denied claims that Cambodia has given the PLA exclusive rights to use some facilities at Ream. In 2022, a spokesperson for China's Ministry of National Defense stated the upgrade and renovation project of Ream Naval Base was an aid project undertaken by China. *China Military Online*, "China-Cambodia Ream Naval Base Upgrading Project Completely Legitimate, Neutral: Defense Spokesperson," June 30, 2022.

Chinese warships were docked for "training only."[336] In June, Cambodia's leadership reportedly told U.S. Defense Secretary Austin that China's military activities at Ream were intended to help Cambodia modernize its military, not to establish the location as a permanent base for China's forces.[337] According to Thomas Shugart, an adjunct senior fellow at the Center for a New American Security, the facilities that have been built by China at Ream look like "a medium-size naval base with facilities to support training, maintenance, personnel support, supply, and other functions," all of which could make it a resupply station for the PLA Navy similar to that at Djibouti.[338]

China Does Little to Hold North Korea Accountable for Escalatory Activities

China avoided condemning North Korea's provocative military activities* in violation of UN Security Council resolutions.† Instead, China's UN Ambassador Fu Cong issued generic warnings against raising tensions on the Korean Peninsula, particularly in the form of planned large-scale joint military exercise conducted by other countries.[339] China has also fallen short in fulfilling its international obligations to implement UN Security Council resolutions on North Korea to disrupt its nuclear and ballistic missile programs.[340] For instance, Beijing has failed to stop North Korea from evading sanctions measures by using China's territorial waters to facilitate the trade of sanctioned petroleum products and has downplayed the activities of Chinese companies that have provided, transacted with, or exported goods to North Korea.[341] China's military also continues to harass foreign militaries conducting missions in the East China Sea in support of a multinational coalition enforcing UN sanctions on North Korea.[342]

Furthermore, China has done nothing to condemn the deepening ties between North Korea and Russia, including North Korea's willingness to supply Russia with ammunition and ballistic missiles as well as the signing of a defense pact between Russia and North Korea on June 19, 2024.‡[343] Under the terms of the pact, North Korea and Russia "shall immediately provide military and other assistance" to the other party if it "falls into a state of war due to armed invasion," establish mechanisms to "strengthen defense capabilities to prevent war," and facilitate Russian assistance to North Korea's nuclear energy and space programs, all of which violate UN security council resolutions.[344] Instead, Beijing has sought to avoid any semblance of association with the Russian-North Korean military relationship.[345]

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*North Korea claimed at the end of June 2024 that it had successfully tested a new ballistic missile capable of carrying a 4.5-ton warhead. Jack Kim, "North Korea Says It Tested Ballistic Missile Capable of Carrying Super-Large Warhead," *Reuters*, July 1, 2024.

†UN Security Council Resolution 1695 passed in 2006 calls on North Korea to suspend activities related to its ballistic missile program, and subsequent resolutions condemn North Korea for pursuing nuclear weapons and ballistic missiles instead of the welfare of its people. Kelsey Davenport, "UN Security Council Resolutions on North Korea," Arms Control Association, January 2022.

‡In June 2024, a South Korean broadcaster cited an anonymous Republic of Korea government official who claimed that North Korea planned to dispatch military engineers to aid construction efforts in the Russian-controlled Donetsk region. However, these reports appear to be rumors as North Korea has made no such announcement. Shreyas Reddy, "Fact Check: North Korea Has Not Announced Plans to Send Troops to Ukraine—Yet," *NK News*, June 27, 2024.

China's Transactional Approach in the Middle East Supports Its Interests

In late 2023 and 2024, China pursued a selective and transactional approach to relations in the Middle East and demonstrated willingness to exploit regional tensions for geopolitical gain. Beijing made several diplomatic overtures to paint itself as a conflict mediator between Israel and Hamas, but these have failed to result in substantive steps advancing a resolution to the conflict.[346] At the same time, China has sought to appeal to Arab states and has offered support for Iran to advance its own interests.[347] China's failure to clearly and unequivocally condemn the Hamas terrorist attack against Israel on October 7, 2023, exposed China's use of the conflict to further align itself with Arab countries and other countries in the "Global South."[348] Despite the PLA's stated mission in the region being focused on anti-piracy, it also did not contribute to coalition efforts to protect maritime shipping from Iranian-backed Houthi terrorist attacks on commercial shipping in the Red Sea.[349] However, China did denounce Israel's assassination of Hamas terrorist chief Ismail Haniyeh in Tehran.[350] (For more on China's strategic interests and activities in the Middle East, see Chapter 5, "China and the Middle East.")

China Seeks Benefits from Wide-Ranging Contacts in African Countries

China began the year with a push to showcase its diverse and deepening ties in Africa as a key indicator of China's supposed global diplomatic leadership. For the 34th consecutive year, China used the minister of foreign affairs' first overseas visit of the year to highlight relations with the countries of Africa as a core part of China's international affairs.[351] Minister Wang traveled first to Egypt* and Tunisia in North Africa, then to Togo and Côte d'Ivoire in Western Africa, meeting with both the president and foreign minister of each country.[352] China's official readouts assert a commonality of interests, often promoting Xi's three major global initiatives and highlighting areas of potential cooperation (variously, trade, infrastructure, energy, agricultural technology, AI, healthcare, investment, and development).[353] China also sought to benefit from lower-profile party-to-party meetings, especially in central and southern Africa. Between January and May 2024, the CCP's International Liaison Department met with representatives of political parties in Rwanda, Lesotho, Malawi, Burundi, Equatorial Guinea, and Namibia.[354] Readouts of these meetings echo many of the same claims and topics as the readouts from the meetings with government officials, while in some cases they reveal China's ongoing efforts to promote the CCP's authoritarian governance model.[355]

The 2024 Summit of the Forum on China-Africa Cooperation (FOCAC), held in Beijing from September 4 to 6, provided China with a high-profile opportunity to press its case for global leadership in Africa. Representatives from 53 of 54 African countries attended the triennial gathering, with the lone exception of Eswatini, which maintains diplomatic relations with Taiwan.[356] Delegates to the

*Egypt's membership in BRICS was formalized in January 2024. Thaer Mansour, "Egypt's BRICS Membership Officially Activated under Russian Leadership," *New Arab*, January 2, 2024.

2024 FOCAC summit approved the Beijing Action Plan (2025–2027), in which Beijing promised to provide Africa with approximately $50 billion (renminbi [RMB] 360 billion) in financial support during the next three years, including $30 billion (RMB 210 billion) in loans as well as other forms of aid and investment, such as $140 million (RMB 1 billion) in military aid.[357] On the one hand, China's pledge to provide about $10 billion annually in loans to African countries over the next three years represents a significant increase relative to the recent past. On the other hand, the value of the promised new loans remains far less than China's lending to African countries during the peak years of BRI (2013–2018), when Chinese loans often exceeded $15 billion per year.[358] Some of the promised new funding reflects the priorities of China's Global Development Initiative, which emphasizes small-scale projects addressing issues such as climate change and poverty, rather than large infrastructure.[359] At the FOCAC summit, China vowed to help fund 1,000 "small and beautiful" projects to "improve people's livelihood" in Africa and encourage greater Chinese investment in solar, wind, and other green energy initiatives across the continent.[360] At the same time, China continued to provide loans for more traditional large-scale infrastructure projects, including $1 billion for a railway in Nigeria.[361] Significantly, China's financial assistance to African countries will also include yuan-denominated loans, and the Beijing Action Plan explicitly calls for "expanding the use of the RMB in Africa"—part of China's wider goal to internationalize the RMB.[362] (For more on internationalization of the RMB, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.")

While the FOCAC summit was replete with rhetorical nods to China's global leadership and thinly veiled criticisms of the United States and its allies, it also laid bare problems and imbalances in the China-Africa relationship. The summit declaration includes language explicitly reaffirming that "Taiwan is an inalienable part of China's territory" and supporting "all efforts by the Chinese government to achieve national reunification."[363] In an attempt to frame China-Africa ties within the context of China's larger vision for an alternative global order, the Beijing Action Plan is suffused with references to China's preferred diplomatic principles, such as "equal and orderly multipolarization" and "beneficial and inclusive economic globalization," and it refers to China and Africa as "representatives of the Global South."[364] The action plan also repeated Beijing's frequent criticisms of "unilateralism, protectionism, and maximum pressure" as well as "erecting walls and barriers" and "decoupling and supply chain disruption," criticisms that are largely directed at the United States.[365] Nevertheless, the FOCAC summit failed to address several pressing concerns about China-Africa relations, particularly with regard to debt and market access. The renewed expansion of Chinese lending to African countries has exacerbated concerns over debt sustainability, especially considering the lack of transparency in the Chinese lending model.[366] The FOCAC summit also revealed China's lack of progress on promises to import more products from Africa. At the 2021 summit, Xi had vowed to import $300 billion worth of African goods over three years.[367] China failed to reach this target, and in his address to the 2024 summit, Xi made

only vague promises to "unilaterally expand" access to the Chinese market.[368]

China Elevates Diplomatic Outreach to Countries in Latin America and the Caribbean

China sought to deepen its diplomatic and political engagement with countries in Latin America and the Caribbean in 2024 as part of its effort to cast itself as a leader of what it refers to as the "Global South." Most notably and for the first time, after its regular commencement in Africa, Foreign Minister Wang's first overseas trip of the year also included visits to two countries in Latin America and the Caribbean,* namely Brazil and Jamaica.†[369] In meetings throughout the year, China's diplomats tried to present China as a key partner for economic development opportunities and a partner who would work with Latin American and Caribbean countries to safeguard their interests internationally.[370] Chinese officials also conducted party-to-party exchanges in Mexico (multiparty parliamentary delegation), El Salvador (New Ideas Party), and Cuba (Communist Party of Cuba) seeking to promote China's international interests.[371]

China sought to deepen political exchanges with Brazil and further efforts to counterbalance the United States and its allies, with some success. During his visit to Brazil in January 2024, Minister Wang met Brazil's President Luiz Inácio Lula and pushed for strengthening what he called the two countries' "strategic alignment."[372] Chinese government readouts assert that the meetings also discussed trade, investment, BRICS, and "state governance."[373] Exchanging governance experience was a theme, as well, from the seventh meeting between the CCP and the Brazilian Workers Party held in April 2024.[374] In May 2024, Director Liu met with Brazil's deputy foreign minister in Beijing, seeking the country's potential collaboration to reform global governance in multilateral mechanism such as BRICS, the China Community of Latin American and Caribbean States (CELAC) Forum, and the G20.[375] China's efforts in Brazil appear to have had some success. In May 2024, the two countries presented a joint plan for ending the war in Ukraine that did not acknowledge Russia's aggression.[376] Instead, it opposed "dividing the world into isolated political or economic groups" and made a broad call seemingly unrelated to the conflict itself to "enhance international cooperation on energy, currency, finance, trade, food security and the security of critical infrastructure"—all policy areas in which China seeks to deepen ties with other countries to counterbalance the United States.[377]

Concerns about distortions caused by China's economic model may be growing, however. Chinese companies have recently enjoyed significant relative growth in "new infrastructure" industries in the region such as information and communication technology,

*A Chinese state media commentator argued that the visits were a deliberate effort to raise the profile of a region that is "more integrated into the Western system" compared to the rest of the "Global South" and where China's diplomacy has comparatively lagged as a result. Pan Deng, "Wang Yi's First Annual Latin America Visit Holds Landmark Significance," *CGTN*, January 22, 2024.

†Jamaica was the first Caribbean state to establish a strategic partnership with China. Pan Deng, "Wang Yi's First Annual Latin America Visit Holds Landmark Significance," *CGTN*, January 22, 2024.

high-end manufacturing, renewable energy, and EVs, and the first half of 2024 saw a flood of Chinese EVs into Brazilian and Mexican markets.[378] To support its domestic industry, in January 2024 Brazil reinstated tariffs on imported EVs starting at 10 percent, which then increased to 18 percent by July and are set to reach 35 percent by July 2026.[379] In April 2024, Mexico's government ceased providing incentives such as tax cuts and low-cost public land for EVs in the country.[380] The United States and Mexico also announced joint tariffs of 25 percent on steel not melted and poured in the United States, Mexico, or Canada and tariffs of 10 percent on aluminum from China, Russia, Belarus, and Iran.[381]

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PART II

TECHNOLOGY AND CONSUMER PRODUCT OPPORTUNITIES AND RISKS

CHAPTER 3: U.S.-CHINA COMPETITION IN EMERGING TECHNOLOGIES

Abstract

The United States is locked in a long-term strategic competition with China to shape the rapidly evolving global technological landscape. Innovation in emerging technologies could transform society, create new industries, foster new dependencies, and alter the character of warfare. Whichever country secures a lead in key technologies—particularly those with first mover advantages—will tip the balance of power in its favor and reap economic benefits far into the 21st century. China under General Secretary of the Chinese Communist Party (CCP) Xi Jinping has recognized the potential advantages of seizing the innovation "high ground" in this competition and has aggressively designed, implemented, and funded programs to dominate technologies of the future. In doing so, Beijing hopes its efforts will underpin national rejuvenation, making the country powerful, self-sufficient, and impervious to perceived technological "containment" from the United States and its allies and partners. China has focused on developing emerging technologies such as artificial intelligence (AI), quantum technologies, biotechnology, and battery energy storage systems. The United States has similarly realized the importance of technology competition with China and has significantly altered the policy environment around key technologies, particularly semiconductors, advanced computing, and clean energy. China faces many challenges, including these U.S. policies, a faltering domestic economy, and inefficiencies inherent in its state-directed innovation system. However, if China manages to overcome these challenges, its rapid technological progress threatens U.S. economic and military leadership and may erode deterrence and stability in the Pacific, as well as tip the global balance of power.

Key Findings

- The CCP is prioritizing research in key emerging technology areas such as AI, quantum technology, biotechnology, and batteries with the goal of becoming a world leader in science and technology. Xi is placing a bet that China's investments in high-tech industries will unleash "new quality productive forces," transcend an old growth model reliant on infrastructure and lower-technology exports, and help China to achieve

its goal of becoming a superpower in the 21st century. China's focus on emerging technologies is also motivated by its desire to attain self-sufficiency in what its leaders describe as "chokepoint" technologies amid an international environment they perceive as increasingly hostile and to better prepare for a potential conflict with the United States over Taiwan or in other contingencies.

- China's state-centric approach and heavy investments in domestic innovation reflect similar techno-nationalist initiatives dating back to the Mao Zedong era. Under Xi, these efforts have intensified as the Party has sought to impose tighter top-down control in the innovation ecosystem to make breaking dependencies on foreign technologies a focal point.
- The United States and China are neck-and-neck, with one being ahead or behind depending on the specific critical and emerging technology. On certain manufacturing-intensive technologies, like advanced batteries and electric vehicles (EVs), China's various efforts have enabled its companies to obtain a clear advantage.
- ***Artificial intelligence:*** China is making rapid advancements and noteworthy investments in its AI capabilities. It is developing AI not only to advance China's economic growth more broadly but also for military applications, such as autonomous unmanned systems, data processing, decision-making, and cognitive warfare. Across key aspects of AI competition, however, China is having mixed success.
  - ***Advanced semiconductors:*** The United States and like-minded countries currently have an advantage in the advanced semiconductors needed to power AI technologies. China is aggressively working to address this deficit.
  - ***Compute and cloud:*** The United States leads in total compute and cloud, but several Chinese companies have notable cloud capabilities. Further, the nature of cloud computing creates a heightened threat of "leakage" into China of advanced compute capabilities located outside of China.
  - ***AI models:*** The United States currently leads the world in developing robust AI models, but China is pursuing numerous government-led and ostensibly private efforts to develop advanced AI models.
  - ***Data:*** Data are critical to AI capabilities. Each country has certain advantages in terms of collection, use, and availability of data for AI systems. China understands the value of data to AI and has taken active measures to increase the availability of quality data within its AI ecosystem.
- ***Quantum technologies:*** Both the United States and China are heavily funding research in quantum computing, sensing, and communications, the three subdomains that together make up quantum information science (QIS). While QIS is still in an early stage of development, it will have significant competitive and military impacts if it becomes commercially viable. China's Par-

ty-state drives quantum research through support to a major state laboratory in Anhui Province as well as a growing roster of state-backed startup companies. China appears to be an early leader in quantum communications, launching the world's first quantum communications satellite and connecting two ground stations with quantum key distribution. In other areas, China appears to be lagging behind the United States, though its scientists have claimed breakthroughs in cracking encrypted communications systems and developing advanced radar technology, claims that are difficult to confirm.

- ***Biotechnology:*** Biotechnology is another key emerging technology with the potential for transforming many industries. China aims to use biotechnologies to make itself less dependent on U.S. agriculture while embedding Chinese firms in U.S. food production and supply chains in genomic, pharmaceutical, and other biotechnologies. The major research and market presence of Chinese genomic and biotech services companies in the United States gives these companies access to key technologies and data.
- ***Advanced batteries:*** China has attained a sizable advantage at each stage of the battery supply chain, ushering in rapid global market share increases for Chinese EV and battery makers. China's near monopoly on battery manufacturing creates dependencies for U.S. auto manufacturers reliant on upstream suppliers as well as potential latent threats to U.S. critical infrastructure from the ongoing installation of Chinese-made battery energy storage systems throughout U.S. electrical grids and backup systems for industrial users.

Recommendations

The Commission recommends:

- Congress establish and fund a Manhattan Project-like program dedicated to racing to and acquiring an Artificial General Intelligence (AGI) capability. AGI is generally defined as systems that are as good as or better than human capabilities across all cognitive domains and would surpass the sharpest human minds at every task. Among the specific actions the Commission recommends for Congress:
  - Provide broad multiyear contracting authority to the executive branch and associated funding for leading artificial intelligence, cloud, and data center companies and others to advance the stated policy at a pace and scale consistent with the goal of U.S. AGI leadership; and
  - Direct the U.S. secretary of defense to provide a Defense Priorities and Allocations System "DX Rating" to items in the artificial intelligence ecosystem to ensure this project receives national priority.
- Congress consider legislation to:
  - Require prior approval and ongoing oversight of Chinese involvement in biotechnology companies engaged in operations

in the United States, including research or other related transactions. Such approval and oversight operations shall be conducted by the U.S. Department of Health and Human Services in consultation with other appropriate governmental entities. In identifying the involvement of Chinese entities or interests in the U.S. biotechnology sector, Congress should include firms and persons:

- Engaged in genomic research;
- Evaluating and/or reporting on genetic data, including for medical or therapeutic purposes or ancestral documentation;
- Participating in pharmaceutical development;
- Involved with U.S. colleges and universities; and
- Involved with federal, state, or local governments or agencies and departments.

- Support significant Federal Government investments in biotechnology in the United States and with U.S. entities at every level of the technology development cycle and supply chain, from basic research through product development and market deployment, including investments in intermediate services capacity and equipment manufacturing capacity.

- To protect U.S. economic and national security interests, Congress consider legislation to restrict or ban the importation of certain technologies and services controlled by Chinese entities, including:
  - Autonomous humanoid robots with advanced capabilities of (i) dexterity, (ii) locomotion, and (iii) intelligence; and
  - Energy infrastructure products that involve remote servicing, maintenance, or monitoring capabilities, such as load balancing and other batteries supporting the electrical grid, batteries used as backup systems for industrial facilities and/or critical infrastructure, and transformers and associated equipment.
- Congress encourage the Administration's ongoing rulemaking efforts regarding "connected vehicles" to cover industrial machinery, Internet of Things devices, appliances, and other connected devices produced by Chinese entities or including Chinese technologies that can be accessed, serviced, maintained, or updated remotely or through physical updates.
- Congress enact legislation prohibiting granting seats on boards of directors and information rights to China-based investors in strategic technology sectors. Allowing foreign investors to hold seats and observer seats on the boards of U.S. technology start-ups provides them with sensitive strategic information, which could be leveraged to gain competitive advantages. Prohibiting this practice would protect intellectual property and ensure that U.S. technological advances are not compromised. It would also reduce the risk of corporate espionage, safeguarding America's leadership in emerging technologies.

- Congress establish that:
  - The U.S. government will unilaterally or with key international partners seek to vertically integrate in the development and commercialization of quantum technology.
  - Federal Government investments in quantum technology support every level of the technology development cycle and supply chain from basic research through product development and market deployment, including investments in intermediate services capacity.
  - The Office of Science and Technology Policy, in consultation with appropriate agencies and experts, develop a Quantum Technology Supply Chain Roadmap to ensure that the United States coordinates outbound investment, U.S. critical supply chain assessments, the activities of the Committee on Foreign Investment in the United States (CFIUS), and federally supported research activities to ensure that the United States, along with key allies and partners, will lead in this critical technology and not advance Chinese capabilities and development.

Introduction

This chapter examines U.S.-China technology competition from the standpoint of economic and national security. Beijing hopes its efforts to gain leadership in emerging technology will underpin national rejuvenation, making the country powerful, self-sufficient, and impervious to perceived technological "containment" from the United States and its allies and partners.[1] This chapter first provides context, noting a recent shift in U.S. policy across multiple administrations to address the challenges of technology competition with China and China's efforts to lead in key technologies. It then focuses on U.S.-China technology competition in four key emerging technology areas: AI, QIS, biotechnology, and advanced battery technology. For each technology, the chapter highlights commercial and national security implications of the technology, compares relative capabilities of China and the United States, examines China's policies and investments, and analyzes China's exploration of such technologies for military and national security uses. Lastly, the chapter discusses the implications of U.S.-China technology competition for the national security and economic prosperity of the United States. The chapter draws on the Commission's February 2024 hearing on "Current and Emerging Technologies in U.S.-China Economic and National Security Competition," consultations with experts, and open source research and analysis.

Securing U.S. Advantage in Emerging Technologies

The policy environment around U.S.-China technology competition has shifted significantly. For years, Chinese companies and the Party-state have sought to acquire U.S. cutting-edge technology, intellectual property (IP), and know-how through licit and illicit means. For much of that time, outside of narrow export controls and occasional foreign investment reviews, U.S. policy was inadequately responsive to China's technology policies and ambitions. A large

constraint on technology transfer to China in many areas came from the reluctance of U.S. companies to transfer their best technology to China out of concerns over IP theft rather than U.S. law.[2] In recent years, however, successive administrations and Congress have identified emerging technologies as central to the U.S.-China strategic competition.

As attitudes in the United States have shifted, the United States has taken a number of steps in recent years to better protect U.S. national security and shore up U.S. advantages in the development, production, and protection of these technologies. U.S. policymakers have identified certain "critical and emerging technologies" or "foundational" technologies as vital to economic and national security, including advanced semiconductors, quantum information systems, and AI; biotechnologies and biomanufacturing; and clean energy generation and storage technology.[3] Each of these families of technologies carries the potential to be a "force multiplier" across the various fields of technology, accelerating the broader pace of innovation and adoption, and serving as a bedrock upon which to ground future industries.[4] Each also has significant national security implications.

U.S. policy has begun to shift to recognize the importance of competition with China over these critical technologies. In recent years, the United States has made investments to help ensure it retains an edge in key foundational technologies; it has also expanded use of export controls relating to advanced semiconductors and AI and tightened up other avenues that adversaries use to gain access to sensitive U.S. technology. Now that U.S. policymakers have realized the stakes, U.S.-China technology competition will continue to be a key issue in the U.S.-China economic and security policy space for years to come.

China Has Long Sought Dominance in Emerging Technologies

China has long sought to spur domestic science and technology innovation to enhance its military and commercial progress, but it is intensifying its efforts in light of disruptive global events and heightened competition with the United States. China is seeking to dominate emerging technology industries to sustain economic growth as traditional sectors atrophy and to exert greater global influence via the trade and economic leverage that come with these technologies.

The CCP has clearly articulated and publicly stated its priorities in emerging technologies, and it leverages a variety of assets to direct attention, effort, and resources toward these priorities. In contrast to the more market-oriented innovation landscape in the United States, the state takes on a much more prominent role in China's technology ecosystem, with the government strategically allocating funding and resources to industries and research areas deemed a priority.[5] The results of abundant and sustained state support have been mixed, creating expected inefficiencies commonly associated with centrally planned economies and yet also enabling tremendous returns to scale for fledgling industries that have resulted in clear comparative advantages for Chinese producers of certain technolo-

gies.[6] Despite the traction of some of these efforts, China faces challenges, including a shortage of highly skilled workers and economic headwinds.[7] Additionally, while China has increased its scientific research and patent output, translating these findings into groundbreaking innovations and economic benefits remains a hurdle.[8]

China under the CCP has a long history of techno-nationalism, often rooted in fear of being dominated by technologically superior foreign powers.[9] For example, China successfully developed the atomic bomb in 1964 through "Project 596," a national initiative that aimed to build nuclear weapons.[10] Similar national innovation programs have been used to achieve advancement in targeted technology areas, such as the National High-Tech R&D Program (863 Program) established in 1986 and the National Basic Research Program (973 Program) established in 1997.[11] These large government-funded initiatives channeled financing and resources to scientists and entrepreneurs credited with producing the world's first quantum telephone network, improved solar technology, and the Tianhe-1A supercomputer, which for a time was the world's fastest computer.[12]

In the mid-2000s, China made explicit its intention to use technology policy to move up the value chain of global production, increase its indigenous capacity, and become a global leader in certain technology areas. The 2006 Medium- to Long-Term Program (MLP) for the Development of Science and Technology articulated the need to facilitate indigenous innovation and set specific goals to be achieved by 2020. These included targets in research and development (R&D) spending, patent filing, and publication of academic articles.[13] China implemented numerous policies under the MLP in the ensuing years, many of which ran counter to the letter and spirit of WTO rules.[14]

Techno-Nationalism Accelerates under Xi

General Secretary Xi has continued—and in recent years, accelerated—these techno-nationalist policies, focusing efforts on technologies he believes are transformative and can propel China into dominance this century by leapfrogging the United States. Seeking to accelerate progress under the MLP, in 2015, China rolled out "Made in China (MIC) 2025," a more comprehensive industrial policy intended to improve manufacturing processes and achieve breakthroughs in ten high-value sectors.*[15] MIC set ambitious domestic market share targets in the identified priority sectors for Chinese-made products, including 80 percent for EVs and batteries, 70 percent for industrial robotics, and 40 percent for mobile phone chips.[16] The *South China Morning Post* claimed in April 2024 that 86 percent of these targets had been met or exceeded.[17]

Xi has doubled down on the state-centric approach in order to seize the "high ground" of innovation, rhetorically highlighting its importance and promulgating further iterations to industrial policy.[18] In speeches and policy documents, Xi and other top Chinese

*The ten high-value sectors highlighted in Made in China 2025 are advanced railway transportation equipment, aerospace, agricultural machines, biopharma and high-tech medical devices, energy equipment, high-end computerized machines and robots, maritime equipment and high-tech ships, new energy and energy-saving vehicles, new generation information technology, and new materials. Karen M. Sutter, "'Made in China 2025' Industrial Policies: Issues for Congress," *Congressional Research Service* IF10964, March 10, 2023.

leaders have emphasized the need to reduce reliance on so-called "chokepoint" technologies, particularly those controlled by Western countries, by achieving breakthroughs in domestic innovation and developing alternative sources of supply.*[19] In March 2023, the State Council asserted that global competition and external "containment" necessitated the acceleration of "high-level scientific and technological self-reliance and self-improvement."[20]

China's 14th Five-Year Plan (2021–2025) built on previous initiatives to advance high-priority sectors like AI, QIS, biotechnology, and advanced batteries.[21] It also indicated a response to what the CCP perceives as an increasingly hostile and disruptive global environment by incorporating the "dual-circulation"† development model and placing an emphasis on obtaining foreign technologies through pathways that remain open, such as research partnerships, establishing R&D centers abroad, and providing incentives for technological talent to work in China.[22]

More recently, Xi has introduced the concept of "new quality productive forces," which the National People's Congress elevated as its top policy priority during its annual meeting in March 2024 and adopted at the Third Plenum held a few months later in July.[23] This slogan, now being widely disseminated in Chinese political discourse, indicates that China is focusing its state-led economic efforts to enhance competitiveness in emerging technologies like AI and clean energy to ensure continued economic growth and global economic leverage through dominance in key technologies of the future.[24] In doing so, China hopes to eclipse the United States across the full spectrum of national power.[25]

Under Xi, the CCP regime has also moved to assert greater control over science and technology innovation efforts, aiming to enhance Party control and ensure alignment with Party priorities.[26] After the reform and opening up era in the 1980s, China facilitated research and capital linkages through a system of hundreds of publicly funded laboratories—often integrated into universities and private companies—and by clustering research facilities and businesses in development zones.[27] This decentralized approach was intended to harness private efforts and allow for localized policy experimentation.[28] In 2016, the Party under Xi moved to reform the system of state labs and development zones under the "Innova-

*While publicly available official policy documents describe "key and core technologies" controlled by "others" as an area of concern, Chinese leadership rarely delineates these technologies. In a 2021 speech before the Chinese Academy of Sciences, Xi called on the scientific community to "resolutely win the battle over key core technologies" by focusing efforts on basic research that can "break through bottlenecks" and "understand the basic theories and technical principles of 'chokepoint' technologies." In 2018, the Chinese state media newspaper *Science and Technology Daily* published a list of 35 chokepoint technologies reviewed and approved by the Ministry of Science and Technology, among them machinery to fabricate semiconductors such as photo-lithography machines and vacuum evaporators, specialized steel alloys, and aviation software. Ben Murphy, "Chokepoints: China's Self-Identified Strategic Technology Import Dependencies," *Center for Security and Emerging Technology*, May 2022, 1, 3; Xi Jinping, "Accelerate the Construction of a Scientific and Technological Power to Achieve High-Level Scientific and Technological Self-Reliance and Self Improvement" (习近平:加快建设科技强国 实现高水平科技自立自强), *Qiushi*, April 30, 2022. Translation.

†Dual circulation consists of achieving a largely self-reliant domestic economy by relying on the production base and massive consumer market to vertically integrate important industries, while simultaneously deepening dependencies on Chinese high-quality exports around the world. Karen M. Sutter and Michael D. Sutherland, "China's 14th Five-Year Plan: A First Look," *Congressional Research Service* IF11684, January 5, 2021; Center for Strategic and International Studies, "Will the Dual Circulation Strategy Enable China to Compete in a Post-Pandemic World?" December 15, 2021.

tion-Driven Development Strategy."[29] A key objective of this strategy is to consolidate what was determined to be a fragmented innovation landscape with an overabundance of research funding for underperforming efforts into higher-performing equivalent institutions more directly controlled by the CCP and focused on achieving self-sufficiency in key "bottleneck" technologies.[30] In March 2023, China also announced plans to restructure its Ministry of Science and Technology to reduce its responsibilities and centralize Party control through the establishment of a decision-making body called the Central Commission on Science and Technology.[31]

Funding Mechanisms Buttress China's Science and Technology Ambitions

The United States has long led the world in both public and private sector funding for R&D,* though China is closing the gap. The Chinese government has prioritized R&D funding to accelerate its ambitions to innovate in science and technology and better compete with the United States.[32] According to data from the Organisation for Economic Co-operation and Development (OECD) that compare R&D spending across countries using purchasing power parity, in 2021 the United States continues to outpace China on total R&D, spending $806 billion (3.46 percent of gross domestic product [GDP]) compared to China's $667.6 billion (2.43 percent of GDP).[33] In this dataset, government funding represented roughly 20 percent of total R&D spending in both countries.[34] However, a 2023 estimate from Rhodium Group found that approximately 60 percent of all financing within China's science and technology ecosystem came from government-related sources of funding after accounting for tax incentives and off-budget financing, distinguishing it from other large and technologically advanced economies.[35] In total dollars spent, U.S. multinational enterprises in high-tech industries spent 240 percent more on R&D than Chinese firms in 2021, spending $529 billion and $154 billion, respectively.[36] However, when adjusted for wage differences, U.S. companies only spent 80 percent more than their Chinese counterparts.[37] In her written testimony before the Commission, Ngor Luong, a senior research analyst at the Center for Security and Emerging Technology (CSET), noted that in 2022 the Chinese National Bureau of Statistics reported that the country's R&D investment increased by 10 percent from 2021, outpacing its goal of 7 percent annual increases outlined in the 14th Five-Year Plan.[38]

In addition to direct government funding, traditionally, China has utilized an array of state-owned enterprises (SOEs) to direct

*R&D is typically subdivided into three components: (1) basic research, which is experimental or theoretical and attempts to generate new knowledge devoid of a particular application; (2) applied research, which seeks to acquire new knowledge that can be directed toward a practical objective; and (3) experimental development, which is the systematic approach to utilize knowledge gained through research to produce new products or services or improve existing products or services. Together, basic research and applied research comprise "fundamental research." In medical and life sciences, the more common term "translational research," sometimes used synonymously with applied research, is the process of moving discoveries from basic research into medical applications for patients and populations. National Institutes of Health, "About Translational Science," April 19, 2024; Organisation for Economic Co-operation and Development, "Research and Development (R&D)," 2024; Marco Zarbin, "What Constitutes Translational Research? Implications for the Scope of Translational Vision Science and Technology," *Translational Vision Science & Technology*, July 14, 2020; U.S. Department of Defense, Defense Advanced Research Projects Agency, *Fundamental Research*.

capital to key sectors and advance national innovation goals. China's Minister of Science and Technology Wang Zhigang has called on SOEs to be "pillars" in the country's whole-of-nation approach to achieve self-sufficiency and high-technology innovation.[39] China's state-owned banks have been instrumental in directing capital to national priorities, exemplified by six state-owned investors together providing one-third of the investment in the latest $47 billion semiconductor fund alongside other SOEs and the Ministry of Finance.[40] China's central government is expected to continue to provide robust support to SOEs involved in national security priorities, including aerospace and defense and policy banks, while support for those in disfavored sectors, such as real estate and even consumer goods, is less assured.[41] Beyond providing funding, SOEs have been directed to increase their own levels of R&D spending and seek opportunities to integrate more agile high-tech small and medium enterprises into their supply chains.[42]

Beijing also uses government guidance funds—public-private funding mechanisms that blend state capital with Chinese private equity and venture capital—to steer capital toward strategic industries such as AI.[43] However, Ms. Luong, along with research fellow Zachary Arnold and Chinese translation manager Ben Murphy at CSET, find that in practice "most guidance funds fail to live up to their ambitions, weakened by unrealistic goals, bureaucratic constraints, incompetent management, risk aversion, and a lack of market discipline."[44]

The Reshaping of Beijing's Innovation Drive to Utilize Small and Medium-Sized Enterprises

Over the past decade, China has pivoted its innovation-oriented policies to refocus on supporting small and medium-sized (SMEs), developing a whole-of-nation approach to fostering small but highly innovative firms. As emphasized in 2023 by Premier Li Qiang, Beijing now believes that "supporting early tech startups should be a top priority."[45] This shift reflects both Beijing's acknowledgement of the success of "hidden" champions* in China's startup ecosystem and its desire to curtail the "disorderly expansion of capital," seeking to avoid what the Party-state viewed as an excessive concentration of investment in e-platforms, including services like video gaming and online tutoring.[46]

The Little Giants program, officially launched in 2018, forms the core of Beijing's efforts to develop a multi-tiered system to help SMEs compete in emerging technologies or occupy niche but critical segments of global supply chains.[47] The Ministry of Industry and Information Technology (MIIT) certified the first batch of companies as "Little Giants" in 2019, and tens of thousands of SMEs have since received support from the initiative.[48] This system encompasses a broad array of tools to foster innovation, from direct subsidies to initiatives enhancing SME-university collaboration.[49] However, the most important element is the broadened

*Technology analyst Dan Wang argues that many outside observers underestimate China's innovation capacity in part due to China's innovative firms being concentrated in "less flashy" manufacturing capabilities and products sold at lower price points in lower-income countries. Dan Wang, "China's Hidden Tech Revolution: How Beijing Threatens U.S. Dominance," *Foreign Affairs*, February 28, 2023.

access to capital markets for Little Giants.[50] SMEs have historically struggled to access financing within China's bank-dominated financial system where lenders prioritize credit to SOEs and large non-state firms.[51] This acts as a barrier to innovation for many non-state enterprises, one that Beijing aims to ameliorate through the Little Giants program.[52]

China has created a series of new financing mechanisms over the past several years for small firms operating in priority industries, with varying degrees of success. In 2019, the Shanghai-based Science and Technology Innovation Board, or STAR Market, was launched to expand equity investment in smaller Chinese technology companies.[53] The exchange hosts over 500 companies with a combined market cap of $716.7 billion as of June 2024, and it predominately fast-tracks initial public offerings (IPOs) for companies in high-tech fields, including new materials, biomedicine, and information technology.[54] The STAR Market initially outperformed China's other major indices, but as of August 2024 it has fallen 59.7 percent since its peak in July 2020.[55] Following lackluster performance of the index in recent years, the China Securities Regulatory Commission has since raised the requirements for companies seeking to list.[56] The Beijing Stock Exchange also opened in 2021 for even smaller enterprises (with a minimum market value of $30 million, relative to the $140 million required to list on the STAR Market).[57] Little Giants accounted for around 40 percent of listings across all stock exchanges in China in 2022.[58]

Additionally, China is guiding its banking sector to provide easy access to credit, with the People's Bank of China (PBOC) creating a special purpose lending facility that enables innovative SMEs in science and technology areas to refinance loans well below market rates.[59] At the end of 2023, total lending to sci-tech SMEs reached $340 billion (renminbi [RMB] 2.45 trillion),* an increase of 21.9 percent relative to 2022 and outpacing overall loan growth by 11.8 percentage points.[60] Leaderdrive, a non-state SME that produces components for industrial robots, is an illustrative example of the financial support firms gain access to under the program.[61] After it was awarded the Little Giant title in 2019, Leaderdrive benefited from both government guidance fund investments and a listing on the STAR Market in 2020.[62] Large domestic industrial robotics manufacturers also provide a source of ongoing demand for Leaderdrive's production.[63]

Case Studies in U.S.-China Technology Competition

Both the United States and China view AI, QIS, biotechnology, and advanced battery technology as some of the key strategic emerging industries of the future.[64] As outlined in the 14th Five Year Plan (2021–2025), China views these technologies as integral to strengthening its national defense in tandem with driving innovation.[65] The following sections will assess U.S.-China technology competition in these four technologies.

*Unless noted otherwise, this section uses the following exchange rate throughout: $1 = RMB 7.25.

Artificial Intelligence: A Revolutionary Technology with Significant Military Implications

In the broader geostrategic competition between the United States and China, leadership in Artificial Intelligence (AI) has the potential to reshape the global balance of power.[66] AI is the science and engineering of machines that use complex "algorithms, modeled after the decision-making processes of the human brain, that can 'learn' from available data and make increasingly more accurate classifications and predictions over time."* [67] In recent years, AI has been used to solve complex problems, provide predictive analytics, recognize and interpret visual information, engage in natural language processing to create high-quality content and "understand" and analyze written and verbal language, and speed the development of robotics.[68] The country that leads in AI has the potential to reap economic benefits including productivity enhancement and the ability to innovate new products and services and enable insights for business leaders through data analysis.[69] The full extent to which AI will transform and underpin various industries is still unfolding, but its estimated impact is massive. McKinsey & Company estimates that AI could add up to $4.4 trillion annually to the global economy.[70] As discussed below, AI also has numerous military applications that may provide a strategic advantage to the United States or China in an Indo-Pacific conflict.[71]

The United States and China Vie for AI Supremacy

China recognizes the transformational potential of AI and is positioning itself to capitalize on technological breakthroughs. Chinese commentators point to the defeat of the top Chinese player in the boardgame Go by Google's AlphaGo in May 2017 as a "Sputnik moment" for the country, which kicked off an effort to channel attention and resources from entrepreneurs, tech talent, and policymakers.[72] Two months later, the State Council issued an AI strategy titled the "New Generation Artificial Intelligence Development Plan," which called for increased funding and support to make China a leader in AI theory, technology, application, and innovation by 2030.[73] Then, in late 2022, the powerful demonstration of OpenAI's generative model ChatGPT-3 again surprised China's AI industry, exemplifying a clear advantage for the United States.[74] At the annual meeting of China's rubber-stamp legislature, Premier Li announced an "AI+" initiative in his work report intended to "actively develop the digital industry, transform traditional industries with digital technologies, and fully integrate digital technology into the real economy."[75] Beijing is making noteworthy investments in its AI capabilities, utilizing government funding mechanisms and leveraging the non-state sector for its economic development and efforts to "leapfrog" the United States militarily.[76]

*There are numerous subtypes of AI that serve various uses. One of the major types of AI is machine learning, in which a computer algorithm is developed to analyze and make predictions from data that are provided in a system. Deep learning, a form of machine learning, uses complex layers of computation to form a deep neural network, which is capable of learning from large amounts of unstructured data. IBM, "Understanding the Different Types of Artificial Intelligence," October 12, 2023; National Institute of Biomedical Imaging and Bioengineering, *Artificial Intelligence (AI)*.

The race for superior AI across industries relies on successfully bringing together enabling technologies and building blocks, including advanced chips; computational power, including cloud services; well-designed algorithmic models; and vast and rich data to train models. Currently, the United States has a lead in most of these technologies and building blocks.

Semiconductors Underpin U.S.-China AI Competition

Semiconductors are integral to U.S.-China competition in AI. Advanced semiconductors are key to AI capabilities due to their role in accelerating processing speeds and harnessing the computational power needed for complicated AI-related computing tasks.[77] The United States currently has a lead in advanced semiconductors.[78] According to an August 2024 report by the Information Technology and Innovation Foundation, Chinese competitors are around "five years behind global leaders in high-volume manufacturing of leading-edge logic semiconductor chips" and trail in memory chips and semiconductor manufacturing equipment.[79] U.S. companies like NVIDIA and AMD dominate the design of advanced chips, and they are fabricated almost exclusively by Taiwan Semiconductor Manufacturing Company (TSMC).[80] The United States has sought to protect that lead through export controls and domestic investments.[81] The U.S. government and its partners and allies have introduced targeted export controls that have undercut China's ability to access high-end chips and to fabricate them domestically.[82] At the same time, the United States has made substantial investments in growing domestic production capacity through the CHIPS and Science Act.[83]

China has been investing heavily in its domestic semiconductor industry to boost its AI capabilities and overcome its dependence on global supply chains, but it still faces numerous hurdles to overtaking the United States. The export controls by the United States and its allies against China, coupled with China's desire to boost its AI capacities, have spurred China's domestic chip industry to develop more rapidly, leading to significant additional spending and experimentation.[84] In March 2024, the Economist Intelligence Unit estimated that since 2014, China's state-led investment into its semiconductor industry exceeded $150 billion, including central and provincial government support.[85] That estimate came prior to the May 2024 announcement that the third phase of the Chinese government-supported Integrated Circuit Industry Investment Fund (often called "the Big Fund") had raised $47.5 billion of investment to support China's semiconductor industry.[86] If this is all new money, it would bring the total since 2014 to $197.5 billion. At the local level, there are numerous provinces and municipalities that have issued subsidies for local semiconductor-related firms or to support the buildout of the local semiconductor industry.*[87] Specific to AI-focused chips, Beijing's municipal government has also provided new subsidies for firms that purchase domestically produced AI chips.[88] In April 2024, the Beijing Municipal Bureau of Economy and Infor-

*Other instances where subsidies at the local level have been provided include Beijing, Shanghai, Suzhou, Nanjing, Shenzhen, Qingdao, Hefei, Tianjin, Changsha, Wuhan, Chengdu, Wuxi, Hunan Province, Jiangsu Province, and Guangdong Province. See endnote 87 for sourcing.

mation Technology announced that it would give companies a percentage of their investment for purchases of domestically controlled graphic processing unit (GPU) chips used in intelligent computing services, with the city seeking to become fully self-reliant in smart computing infrastructure hardware and software by 2027 under the initiative.[89]

China has made some strides in closing the gap on cutting-edge GPU semiconductors used to train AI models. Wang Tao, Huawei's chief operating officer of its Ascend and Kunpeng ecosystem, claims that Huawei's Ascend 910B AI chip is capable of up to 80 percent of the performance of NVIDIA's A100 GPU when training large language models (LLMs), and in "some other tests" surpasses the A100 by 20 percent.[90] Analysts and sources quoted by *Reuters* claim that the 910B chips are comparable to NVIDIA's in terms of raw computing power but lag in performance.*[91] According to a detailed analysis by CSET, "the performance increase is smaller than advertised; only 75 percent of the theoretical maximum performance increase can be attributed to an actual increase in hardware performance" and "Huawei reduced the number of active AI cores between the 910 and 910B series—likely either due to poor yields or limited capacity on SMIC's 7nm fabrication process."[92] In August 2024, the *Wall Street Journal* reported that Huawei is close to introducing a new chip for AI use, the Ascend 910C, which the company claims is comparable to NVIDIA's H100.[93] However, it has faced production delays with these chips, and further U.S. restrictions may prevent access to machine components and memory chips for its AI hardware.[94] Additionally, some experts have argued that the underlying technology being used to produce Huawei's chips has significantly lower "yield," meaning that a significant portion of the chips produced are flawed and do not function effectively, resulting in appreciably higher total costs to manufacture at scale.[95]

It's Not Just Chips: How Huawei Seeks to Compete across the AI "Stack"

To date, U.S. concerns around AI and China have focused largely on access to advanced semiconductors. Similar to many other advanced technologies, however, AI is powered by a "stack" of enabling hardware, software, and services. Policymakers have paid much less attention to other elements of the AI stack.

NVIDIA is a leader in the AI space not only because of GPUs but also its CUDA software.† Known as its "secret sauce" or "moat," CUDA is NVIDIA's closed-source "AI software ecosystem" that allows programmers to utilize the parallel computing power

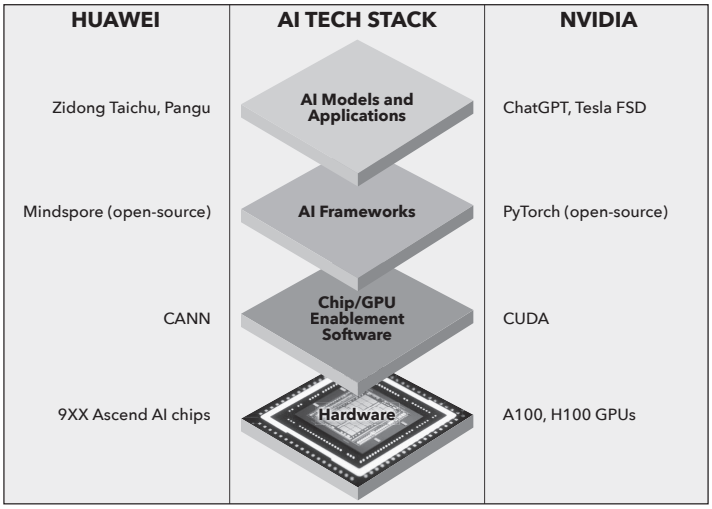
*According to a report by AI Now Institute, a New York-based policy institute, computational power, also known as compute, is measured in floating point operations, or FLOP, which is a mathematical operation that enables the representation of extremely large numbers with greater precision. Compute performance, on the other hand, is measured in floating point operations per second, or FLOP/s. This is essentially the number of computations a given resource can carry out in a second. Jai Vipra and Sarah Myers West, "Computational Power and AI," *AI Now Institute*, September 27, 2023.

†CUDA stands for Compute Unified Device Architecture. Related to CUDA is cuDNN (CUDA deep neural network), a library built on top of CUDA containing tools and routines specific to deep neural networks such as AI. 1kg, "cuDNN: What Is cuDNN?" *Medium*, May 4, 2024; Rakesh Rajpurohit, "Understanding CUDA for GPU Computing," *Medium*, August 15, 2023; Deep Lizard, "CUDA Explained - Why Deep Learning Uses GPUs," September 9, 2018; Fred Oh, "What is Cuda?" NVIDIA, September 10, 2012; NVIDIA, "NVIDIA cuDNN."

It's Not Just Chips: How Huawei Seeks to Compete across the AI "Stack"—*Continued*

of NVIDIA's GPUs for building AI applications.*[96] As NVIDIA has been developing CUDA since 2004, it has a lead over both domestic and foreign AI chip design firms in the resources it can offer AI programmers.†[97] The symbiosis within NVIDIA's AI stack has led to a "flywheel effect" that makes the company essential for many AI developers. As companies purchase more NVIDIA GPUs for AI development, more developers use CUDA; as more developers use CUDA, they increase their dependency on NVIDIA's GPUs.[98]

Figure 1: A Comparison of NVIDIA and Huawei's AI Tech Stacks



Note: The diagram indicates the various software technologies (mid-to-upper layers) that are either directly controlled or best optimized for NVIDIA or Huawei's chip-based hardware (bottom layer), respectively. CANN and CUDA are Huawei and NVIDIA's respective proprietary software frameworks required to manage the parallel processing power of their chips. MindSpore (Huawei) and PyTorch (PyTorch Foundation) are open source AI frameworks that rely on or are best optimized for CANN and CUDA, respectively. Finally, Pangu (Huawei) and ChatGPT (OpenAI) are examples of technologies built or iterated using these AI frameworks.
Source: Various.[99]

*CUDA allows for the optimization, speeding up, and programming of NVIDIA GPU's CUDA core and machine learning-focused Tensor core sub-processing units necessary for parallel computing and the deep learning associated with building AI models. For more, see 1kg, "cuDNN: Common Challenges and Their Practical Solutions," *Medium*, June 26, 2024; Jeremy Appleyard and Scott Yokim, "Programming Tensor Cores in CUDA 9," *NVIDIA Developer*, October 17, 2017; Ravi Rao, "Tensor Cores vs CUDA Cores: The Powerhouses of GPU Computing from NVIDIA," *Wevolver*, July 25, 2024.

†PyTorch and TensorFlow are the most popular AI frameworks for building AI models (though PyTorch is more widely used). This is evolving slightly as Google (which designed and oversees TensorFlow) continues building out its Tensor Processing Unit (TPU) hardware/software AI stack. For now, CUDA is widely seen as the de facto choice for AI frameworks. As the cofounder of PyTorch Soumith Chintala put it in 2023, "The CUDA monopoly is nowhere close to being broken and CUDA will continue to be the key dependency for PyTorch." For more, see Soumith Chintala, *X.com*, Jan 17, 2023. For more on PyTorch popularity compared to TensorFlow, see Valantis K, "Battle of the Giants: TensorFlow vs PyTorch 2023," *Medium*, January 28, 2023. For possible future domestic challenges to NVIDIA and CUDA, see Dylan Patel, "How Nvidia's CUDA Monopoly in Machine Learning Is Breaking - OpenAI Triton and PyTorch 2.0," *SemiAnalysis*, January 16, 2023; Kevin Jackson and Doug Eadline, "Spelunking the HPC and AI GPU Software Stacks," *HPC Wire*, June 21, 2024.

It's Not Just Chips: How Huawei Seeks to Compete across the AI "Stack"—*Continued*

Huawei is not just targeting advanced semiconductors but is also seeking to establish its own "flywheel" to displace NVIDIA's dominance.[100] Like NVIDIA, Huawei's AI "tech stack" starts with its hardware (the Ascend family of AI chips) atop of which is a CUDA-like layer of software known as CANN (Compute Architecture for Neural Networks).[101] Atop of CANN, Huawei has also released MindSpore, an open source AI framework of software similar to the popular PyTorch and TensorFlow AI framework software used to create LLMs and other AI technologies.[102] Though PyTorch and TensorFlow are also open source, Huawei needs an alternative because PyTorch and TensorFlow are largely integrated with CUDA and as a contingency should the U.S. government ever block access to PyTorch and Tensorflow.* [103]

In the short term, Huawei still trails NVIDIA and its AI hardware/software "stack." NVIDIA alone has developed 600 AI models; and four million developers currently use CUDA software for training AI.[104] Programmers in China also have concerns about Huawei's CANN, reporting large-scale issues with bugs, software glitches, and general inferiority to NVIDIA's CUDA.† [105] MindSpore also trails more popular open source AI frameworks such as PyTorch. While the Chinese Academy of Information and Communications Technology (CAICT) has noted that MindSpore is the most popular AI framework domestically within China, it admits that PyTorch and TensorFlow are a "duopoly" internationally.[106]

However, in the long run, Huawei's attempts to recreate NVIDIA's "flywheel" via an integrated AI hardware/software stack bears close attention. As of July 2023, Huawei claimed that the number of Ascend and CANN developers had doubled from a year prior and reached 1.8 million.[107] Huawei has also stated that nearly half of all large language models in China are currently trained on its Ascend (hardware)/CANN (software) AI ecosystem.‡ [108]

Mobile technology provides an instructive example of how Huawei has leveraged privileged access to China's massive domestic market and various types of state support to overcome technological hurdles, accelerate adoption, and continue to pur-

*Though there are other layers of the AI stack, the relationship between hardware (chips) and software (CUDA/CANN) to AI frameworks (PyTorch/MindSpore) that rely on them is critical for understanding NVIDIA and Huawei's "flywheels".

†China's own developers are still heavily reliant on CUDA, with prominent Chinese chip startups like Moore Threads and Denglin using or accessing CUDA. Jeff Pao, "'China's NVIDIA' Collapsing in a Heated Funding Dispute," *Asia Times*, September 3, 2024; Che Pan, "Tech War: NVIDIA's Move to Curb Use of CUDA Exposes China's Weak Link in Chip Software," *South China Morning Post*, March 6, 2024; Simon Sharwood, "China's GPU Contender Moore Threads Reveals Card That Can Cope with NVIDIA's CUDA," *Register*, December 20, 2023.

‡Based on the most recent filings from the Cyberspace Administration of China's Algorithmic Registry, as of August 5, there are 487 algorithms registered within China. This includes a mix of generative AI models, recommendation engines, and other algorithm/AI applications. Cyberspace Administration of China, Announcement of the Cyberspace Administration of China on the Release of the Seventh Batch of Deep Synthesis Service Algorithm Registration Information (国家互联网信息办公室关于发布第七批深度合成服务算法备案信息的公告), August 5, 2024. Translation; Qiheng Chen, "China's Emerging Approach to Regulating General-Purpose Artificial Intelligence: Balancing Innovation and Control," *Asia Society Policy Institute*, February 7, 2024; Matt Sheehan, "What China's Algorithm Registry Reveals about AI Governance," *Carnegie Endowment for Peace*, December 8, 2022.

It's Not Just Chips: How Huawei Seeks to Compete across the AI "Stack"—*Continued*

sue technological leadership.* The United States added Huawei to the Entity List in May 2019, restricting access of Huawei to various products and technologies, including semiconductors, the licensed version of Android (which was the operating system [OS] underlying Huawei's handsets), Android OS updates, and access to Google apps and services.[109] Leading U.S. tech publications that saw Huawei as a leading manufacturer of low-cost hardware were concerned that the Android ban, in particular, would irreparably harm the company moving forward.[110] Huawei's domestic Android alternative, Harmony OS (HongMeng), was dismissed by Western critics as a glorified "fork" that relied on Android's open source software, which would face myriad challenges in becoming a viable rival to Android.[111]

Five years later, however, the pairing of Harmony OS with China's export control-defying hardware (the Kirin 9000 chip) has been a key reason Huawei has continued to remain competitive in the handset space.[112] Harmony OS currently is used on over 900 million devices globally; 2.5 million developers are working on apps for the Harmony OS platform, and Huawei targets one million apps for the OS in the near future.[113] The company's next mobile operating system, HarmonyOS NEXT, scheduled to debut October 2024, will remove its Android open source code, making it a fully independent mobile operating system.[114]

China has made progress in expanding "legacy" or "mature node" semiconductor production. Semiconductor Manufacturing International Corporation (SMIC) has become the world's third-largest foundry and is prominent in "mature node," or 28 nm and above chip production.[115] These chips are less demanding in wafer production and are made with older-generation deep ultraviolet lithography equipment.[116] China is rapidly expanding production capacity for these semiconductors, which are crucial to a wide range of commercial products. According to one estimate, China is on pace to add more than 18 new chip fabs in 2024 alone.[117] The Information Technology and Innovation Foundation estimates that between 2022 and 2026, China will bring 26 new fabs online, a majority of which will build legacy chips.[118] According to Silverado Policy Accelerator, "China has the most fabs expected to come online during 2022–26, which will result in it having the most both 200 mm and 300 mm wafer capacity in the world" and "as of March 2023, [China] accounted for 32 percent [the world's largest share] of current and planned capacity for 20 to 180 nm semiconductors (excluding memory)."[119]

*On a related point, Huawei's continued status as the global leader in 5G technology—as of 2023 it is still the number one provider globally—suggests limits to U.S. technology controls and related efforts to limit the spread of national security-sensitive Chinese technology. 5G has some important differences, however, given that Huawei was already the global leader in this technology before the imposition of U.S. controls. Daniel Chiang and Vyra Wu, "Huawei vs. Samsung: Who Leads the Global Communication Equipment Race?" *DigiTimes*, April 17, 2024.

The Silverado production capacity estimates were made in October 2023; since then, China's imports of semiconductor manufacturing equipment surged to new highs for calendar year 2023 and are on pace to surpass that in 2024. In 2023, China was the largest global importer of semiconductor manufacturing equipment, importing $42.5 billion, almost $15 billion more than Taiwan, the second-largest importer.[120] According to data from China's General Administration of Customs, Chinese imports of chip equipment in the first seven months of 2024 hit a new high, totaling $26 billion.[121] Lithography tools, in particular, are a key piece of semiconductor manufacturing equipment for which China currently has no significant domestic alternative, with only an estimated 1 to 1.2 percent of lithography tools manufactured domestically.[122] In the past five years, China has imported 444 lithography machines from EU trading partners (predominantly the Netherlands) and $27.4 billion dollars' worth of semiconductor manufacturing equipment in 2023, an increase of nearly 50 percent from the prior year.*[123]

Given limitations on advanced semiconductor manufacturing equipment sales, China is constantly pursuing legal and illegal means to acquire semiconductor manufacturing equipment.[124] On its own, China is not likely to catch up at scale on high-end AI chips, at least not using current technology.[125] SMIC and Yangtze Memory Technologies Corp (YMTC) are still dependent on Western equipment, especially for making more high-end semiconductors.[126] Unless China can solve the "yield" problem inherent in using older equipment to produce more advanced semiconductors, it is not likely to be able to produce AI-caliber chips in quantities needed for the massive expansion in AI demand that is projected.[127] It is worth noting, though, that total AI infrastructure demands for national security uses are likely a fraction of those needed for the broader commercial market.

Legacy Semiconductors Underpin Wide Variety of Modern Technologies; Significant Risk of Overcapacity Glut from China

Although the world's most cutting-edge semiconductors are at the forefront of advancements in AI, "legacy" semiconductors are critical for a whole host of other technologies.† Legacy chips are pervasive and essential, as they can be found in nearly every electronic device ranging from automobiles, fighter jets, drones, medical devices, smartphones, computers, industrial equipment, scientific equipment, communications devices, sensors, and more.[128]

*The complexity of these machines cannot be overstated. The latest extreme ultraviolet lithography machines produced by ASML are "the size of a bus, but so accurate they could direct a laser to hit a golf ball as far away as the Moon." Lucy Rodgers et al., "Inside the Miracle of Modern Chip Manufacturing," *Financial Times*, February 28, 2024,

†Chips are categorized based on their function. Analog chips are used to capture real-world wave signals such as those used in sound amplification, energy regulation, some sensors, and surveillance equipment. The most sophisticated category is logic chips, which process data and conduct computing functions, with applications in smartphones, AI and advanced computing, and the automotive industry. Logic chips are differentiated further based on performance, which is related to the distance between circuits, or nodes. Generally, chips below the 10-nanometer node threshold are considered advanced, with smaller nodes allowing for more transistors to be packed onto a chip to increase computational speed and power. Lin Jones et al., "U.S. Exposure to the Taiwanese Semiconductor Industry," *U.S. International Trade Commission*, November 2023, 5.

Legacy Semiconductors Underpin Wide Variety of Modern Technologies; Significant Risk of Overcapacity Glut from China—*Continued*

In some cases, mature node chips are used alongside leading-edge processors to power these technologies; in others, only "legacy" chips are needed.[129]

Currently, the legacy semiconductor supply chain is fairly diversified, but China already plays an important role in it. China accounted for 31 percent of global legacy chip production at the end of 2023, and in a few years it is projected to become the leading global producer of 200 mm to 300 mm semiconductors.[130] According to a May 2024 report by Rhodium Group, China not only has more capacity than any other country in analog, discrete, mixed-signal, and power chips, it is also expanding production capacity in those chips faster and at a larger scale than any other country.[131]

Legacy chips have also been an important source of technological power bolstering Russia's war against Ukraine. According to a June 2024 *New York Times* report, an expansive network of illicit exporters operating in China and several other countries has managed to ship an estimated $4 billion worth of restricted integrated circuits to Russia since its invasion of Ukraine. Many of these come from Chinese companies shipping via shell companies in Hong Kong, helping "China emerg[e] as the dominant chip supplier to Russia."[132] Despite not being suitable for advanced military technologies such as AI, legacy semiconductors have been found in a host of Russian weapons and are a critical dual-use technology for Russia's war efforts. (For more information on China's sales of integrated circuits to Russia, see Chapter 1, "U.S.-China Economic and Trade Relations (Year in Review).")

If past is prologue, once China's massive new semiconductor fabrication capacity comes online, China may flood the world with cheap legacy semiconductors, forcing prices down.[133] In turn, this could threaten the viability of other countries' legacy semiconductor industries and provide China significant global economic leverage.[134] According to Jimmy Goodrich, nonresident fellow at the University of California's Institute on Global Conflict and Cooperation, "Already, Chinese foundries are engaged in a price war with their domestic competitors that has spilled over to impact similar firms in Taiwan and South Korea."[135] This scenario echoes the first "China shock" and highlights rising concerns that China's economic model is premised on investing in excess capacity and relying on global markets to absorb the exports.[136]

China Seeks to Close the Gap with the United States in Total Compute Power

The rise in demand for AI has come with a corresponding need for greater compute power, as training models require a substantial amount of data and compute-intensive resources provided by

advanced semiconductors.*[137] In this context, compute power, computing power, or "compute" generally refers to national-level or company-level infrastructure, capabilities, and resources dedicated to computational power and data processing.[138] These may include the development and use of computing systems, data centers, cloud computing facilities, and networks that support high-end computational tasks.[139] The United States currently has a lead in compute power over China. Experts assess that one of the factors contributing to the status of U.S.-based companies—including OpenAI, Google, and Meta—as some of the dominant players in the global AI landscape is their preferential access to compute.[140] In particular, these three companies are building compute infrastructure using tens or even hundreds of thousands of advanced NVIDIA GPUs, including the cutting-edge GH100.[141] According to Paul Triolo, the senior vice president for China and technology policy lead at Albright Stonebridge Group, and Kendra Schaefer, a partner at Trivium China and nonresident fellow at the National Bureau of Asian Research, "Amassing so many advanced GPUs is largely out of reach for Chinese technology platforms and start-ups," and in contrast to their U.S. counterparts, many Chinese AI players struggle to find access to investment and compute.[142] The U.S. export controls on advanced semiconductors will help the United States maintain its compute power lead because such semiconductors allow for new systems with significantly faster and larger total compute loads necessary for the demands of AI. As such, U.S. export controls have complicated China's long-term capacity to keep up with the United States in compute.[143]

Chinese government efforts to expand national computing power networks and optimize resource efficiency are key to China's AI self-reliance drive, and Beijing has taken multiple policy actions in recent years to improve its computing capabilities. In 2021, China's National Development and Reform Commission announced plans to optimize and integrate computing resources across the country through the (still under construction) National Integrated Computing Power Network.†[144] Chinese government departments set a target in October 2023 to increase the country's aggregate computing power from 197 EFLOPs (a measure of computing speed equal to 1 quintillion floating-point operations per second) to 300 EFLOPs between 2023 and 2025, constituting a 50 percent increase.[145] MIIT claimed in October 2023 that China's compute power ranked second behind the United States, but it did not provide a number for its estimate of U.S. computing power.[146] In May 2024, China launched a three-year action plan to strengthen standards in cutting-edge

*Technologies like high bandwidth memory also allow for faster transfers of data within chips. China has also acknowledged that it lacks a fully indigenous high-bandwidth memory supply chain. Aside from two U.S.-sanctioned companies, China does not have any large-scale high-bandwidth memory producers. Boston Consulting Group, "The Race for Advanced AI Chips," April 17, 2024; Brocade, "The War for AI National Power: GPUs Are the Obvious Thread, but HBM Is the Hidden Thread" (AI国力战争:GPU是明线，HBM是暗线), *CSET Emerging Technology Observatory*, March 28, 2024. Translation.

†The National Integrated Computing Power Network is an integrated and optimized network of computing resources, such as data centers, that aims to boost China's overall computing power and broaden access to computing power nationwide for a variety of applications. For more, see "The EDWC and China's Data Center Buildout" textbox below. *Global Times*, "China Vows to Establish Integrated Computing Power Network, Boosting Digital Economy: NDB Chief," March 25, 2024.

technologies, including national computing power, which will in part focus on enhancing computing power infrastructure standards and strengthening basic standards for data resources.[147]

A critical aspect of compute is cloud computing. The United States leads on cloud computing, but China has made it a priority to catch up. Cloud computing allows computing power to be made available to a wider range of users remotely.* It is a "crucial behind-the-scenes engine of the digital economy . . . allowing companies to run artificial intelligence programs."[148] It is also a major driver of economic activity and technological innovation in both the United States and China. Domestically, the United States is the world's largest cloud market, with its public cloud market expected to exceed $430 billion in 2024.†[149] U.S. companies currently lead the global cloud computing market, with Amazon (32 percent), Microsoft (23 percent), and Google (12 percent) on their own making up a 67 percent global market share.[150]

Within China, Alibaba, Huawei, and Tencent control 72 percent of China's protected domestic cloud market.‡[151] China's cloud market is the world's second-largest market, with the Chinese government-backed think tank CAICT calculating China's 2023 domestic cloud market size at $85 billion and predicting it will reach $293 billion by 2027.[152] Currently, both Microsoft and Amazon AWS operate cloud services in China, with Microsoft offering services under a wholly owned subsidiary of local company 21Vianet and AWS China partnering with local companies Sinnet and NWCD to offer data center services.[153] An Amazon executive for Greater China reportedly stated in June 2024 that AWS "is committed to long-term investments in China, and will focus on offering generative artificial intelligence technology and helping Chinese enterprises in their digital transformation."[154]

In terms of international presence, China's cloud providers currently trail U.S. firms by a significant margin. China's big three cloud companies only make up roughly 8 percent of global cloud market share, led by Alibaba (4 percent global market share), Tencent (2 percent), and Huawei (2 percent).[155] Chinese companies are seeking to make significant inroads, however, in expanding cloud presence in developing and lower-income countries. Though Chinese companies do not publish their total data center figures, China's three largest cloud providers have listed their international (non-China) "availability zones": clusters of data centers offering cloud service. Between Huawei (33), Alibaba (28), and Tencent (22), China's cloud leaders operate 81 data center cluster "availability zones" outside of China.[156] Southeast Asia is currently where Alibaba (10) and Tencent (8) have the most availability zones, with Huawei's leading con-

*The National Institute of Standards and Technology defines cloud computing as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction." Peter Mell and Tim Grance, "SP 800-145: The NIST Definition of Cloud Computing," *U.S. Department of Commerce National Institute of Standards and Technology*, September 2011.

†The term "public cloud" is an industry term generally defined as "computing services offered by third-party providers over the public Internet, making them available to anyone who wants to use or purchase them." Microsoft Azure, "What Is a Public Cloud?".

‡Alibaba controls 37 percent, Huawei controls 19 percent, and Tencent controls 16 percent of China's total domestic cloud market. Canalys, "Mainland China's Cloud Service Spend Grew by 20% in Q1 2024—Canalys," June 27, 2024.

centration of availability zones in Mexico and South America (12), followed closely by Southeast Asia (10).*[157] With Southeast Asia's cloud computing market predicted to hit $40.3 billion by 2025, U.S. and Chinese cloud firms are positioning to battle over market share throughout the region.[158] As Bridge Song, the VP of Alibaba Cloud Intelligence International, publicly stated September 2024, "The primary strategic market of Alibaba Cloud has always been Southeast Asia."[159] China tech analyst Kevin Xu pointed out in July 2023 that in this "battle," the data center buildout of Chinese companies at that time far outpaced U.S. cloud providers, with Amazon having data centers only in Indonesia and Malaysia; Google only offering data centers in Singapore and Indonesia; and Microsoft offering cloud services only in Singapore, with plans to build data centers in Indonesia and Malaysia.[160]

Data storage will be increasingly important as both the United States and China are set to produce more and more data. By 2025, China is predicted to generate more data than the United States, producing 48.6 zettabytes to an estimated 30.6 zettabytes for the United States.[161] Managing and storing this amount of data for both the United States and China will require an enormous amount of physical infrastructure and energy. China is seeking to address these challenges by simultaneously building out data storage and optimizing electrical infrastructure layout for data centers. (For more on this, please see the textbox on "The Eastern Data Western Computing (EDWC) and China's Data Center Buildout" later in this chapter.)

This growth coincides with a Party-state push that sees cloud as essential to China's national security, technological, and economic goals. Leading government organizations such as the State Council and MIIT have highlighted cloud adoption as a key component of strategic "five-year plans" involving the long-term direction of technology and the economy.†[162] Cloud is also crucial to state-led goals for increasing compute through infrastructure as a service (IaaS), with the construction of cloud facilities and data center nodes as the backbone of China's massive "Eastern Data Western Computing" (EDWC) project.[163] Besides the EDWC, China's state asset manager, the State-Owned Assets Supervision and Administration Commission of the State Council (SASAC), has launched a "national cloud" available for use by China's state-owned enterprises.[164] Finally, at the provincial level, companies like Alicloud have been partnering with key municipalities such as Hangzhou, Tianjin, and Shenzhen in efforts to strengthen their local cloud computing infrastructure for data exchanges that China sees as essential to its "new digital economy."‡[165]

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*Until recently, Alibaba also operated cloud data centers in Australia and India (two zones each for four zones total); however, as of 2024, these plants are planning to cease operation. Muhammad Zulhusni, "Alibaba Cloud Shutters Australian and Indian Data Centres, Contradicting Earlier Claims," *CloudTech*, July 2, 2024.

†China's tech firms are not the only players in its cloud computing market; as of July 2024, at least 16 local governments in China have offered companies coupons to access processing power at subsidized prices at large state-run data centers where scarce supplies of advanced chips have been pooled. Also, U.S. tech companies like Amazon and Microsoft continue to provide cloud services in China. Liza Lin, "China Puts Power of State behind AI—and Risks Strangling It," *Wall Street Journal*, July 16, 2024; *Reuters*, "List of Chinese Entities Who Have Turned to the Cloud for Access to Restricted US Tech," August 23, 2024.

‡China's data exchanges are state-supervised sites for the purchase, sale, or "exchange" of data across a wide variety of state and economic sectors. China sees them as critical for utilizing data as a "new factor of production" and strengthening its digital economy. Qiheng Chen, "China Wants

Eastern Data Western Computing (EDWC) and China's Data Center Buildout

China is reshaping a significant part of its domestic development program in order to create the infrastructure for the compute, data center capacity, and electrical power requirements necessary for advanced technologies such as AI. Current estimates indicate China's domestic data centers consume roughly 200 terawatt hours (TWh) of electricity now, set to grow to roughly 300 TWh by 2025 and 380 TWh by 2030.*[166] China's Ministry of Ecology and Environment has estimated that the share of national energy consumption by data centers will rise from 1.5–1.9 percent circa 2020 to over 5 percent by 2030.[167]

China has developed a plan to meet the growing demand for data center compute while potentially contributing to regional development needs. China's eastern regions, where current data centers are concentrated, already face high electricity prices and strained electrical grids.†[168] These problems in Eastern China contrast sharply to the situation of Western China, which has severely underdeveloped data center infrastructure but abundant and cheap energy as well as land.[169] (For more on China's energy needs and constraints, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.")

To solve this imbalance of data center power needs and relative cost structures, China has spent the past several years implementing a grand realignment plan for its digital infrastructure: the Eastern Data Western Computing (EDWC) project. The EDWC envisions a massive buildout of data centers and cloud facilities in western provinces with abundant (green, low-carbon) energy resources, such as Inner Mongolia, Ningxia, and Guizhou.‡[170] Since being formally codified as national-level policy in 2021, the National Development Reform Commission issued a joint order along with numerous other government entities to accelerate the EDWC implementation and buildout.[171]

The EDWC also is intended to advance China's long-term goal of increasing the availability of computing power through a "nationally integrated computing power network," or NICPN, that is

to Put Data to Work as an Economic Resource—But How?" *Digichina*, February 9, 2022; Julia Lu, "China's Data Exchanges, Explained," *Technode*, August 17, 2021.

*A terrawatt hour is the amount of power generated by a 1-terawatt generator (or multiple lower-power generators equivalent to a 1-terawatt generator) for one hour. To put these terms on a human scale, 1 gigawatt is enough to power approximately 750,000 U.S. homes for one year. 1,000 Gigawatts = 1 Terrawatt. Zach Stein, "What Is a Terawatt Hour (TWh)?," *Carbon Collective*, October 1, 2024; Caleb Harding and Lily Ottinger, "Powering China's Data Centers: Batteries or Nukes?" *ChinaTalk*, September 12, 2024.

†Power consumption is a major concern for data center operators, with some academics placing power consumption at 70 percent of a data center's operational expenses. For a general sense of China's power consumption and generation at a national level, a useful comparison comes from Reuter's market analyst John Kemp: "Ten provincial-level areas in the east and south (Liaoning, Hebei, Beijing, Tianjin, Shandong, Jiangsu, Shanghai, Zhejiang, Fujian and Guangdong) accounted for 50% of national consumption but only 40% of generation in 2022. By contrast, six remote and sparsely populated northern and western areas (Inner Mongolia, Xinjiang, Shanxi, Shaanxi, Gansu and Ningxia) accounted for 18% of consumption but 25% of generation." Ning Zhang et al., "The 'Eastern Data and Western Computing' Initiative in China Contributes to Its Net-Zero Target," *Engineering*, August, 2024; John Kemp, "China's Rapid Renewables Rollout Hits Grid Limits," *Reuters*, July 4, 2024.

‡There are several translations of the project's name with slight variants. We have chosen to use "Eastern Data Western Computing," as it is one of the most widely reported translations.

Eastern Data Western Computing (EDWC) and China's Data Center Buildout—*Continued*

currently under construction.[172] The NICPN seeks to pool and allocate compute from the EDWC's interconnected data centers as well as existing data centers in order to boost China's overall computing power and increase the effectiveness of how it is allocated.[173] Newly appointed head of the National Data Administration (NDA) Liu Liehong cites the NICPN as crucial for meeting the computing power needs of advanced technologies like generative AI.[174]

As of June 2024, Liu Liehong announced that China's government had invested roughly $6.2 billion in the project, with additional funding of more than $28.4 billion from other sources, including the private sector.[175] Early analysis reveals the data centers' "primary operators" will be China's big three state-owned telecoms, with China Mobile investing $6.4 billion, China Telecom investing $4.9 billion, and China Unicom investing $3 billion.[176] China tech champions Huawei and Alibaba have also made major investments in the project, with estimated financing of $4.7 billion and $3 billion, respectively.[177]

While the EDWC program faces some challenges over demand, cost, and latency, China's government believes the EDWC and NICPN can boost China's capacity in data center technology, computing power, and the digital economy, particularly as energy demands from data centers for AI increase.[178] The United States is now making efforts to ensure that it maintains a strategic lead in compute by meeting with leading AI, AI GPU, and data center companies to discuss how the United States can rapidly build out its data center infrastructure and provide energy resources to meet the needs of these technologies.[179]

Access to compute via cloud computing complicates and internationalizes U.S.-China AI-related competition. Cloud computing can be an effective way to circumvent export controls on advanced chips, as it allows remote access to the computing power enabled by such chips.* Since the chips themselves are not exported in a cloud computing service, export controls are not necessarily implicated at all.[180] For example, Chinese companies targeted by U.S. sanctions have found workarounds to obtain access to restricted U.S. AI technology by using third-party cloud providers and rental arrangements.[181] iFlytek, a state-backed voice recognition company blacklisted by Washington in 2019, has been renting access to NVIDIA's A100 chips.[182] According to an investigative report by Reuters in August 2024, Chinese state-linked entities were accessing

*Remote access to compute power is also a potential issue for quantum computing. According to Edward Parker with RAND Corporation, "Many quantum computing companies do not sell hardware but instead operate under a cloud-access model whereby customers submit tasks remotely and the companies perform the actual computations in-house. Any export controls on quantum computing should clearly address the permissibility of selling computing services to foreign customers, even if no physical hardware ever leaves the United States." Edward Parker, written response to question for the record for U.S.-China Economic and Security Review Commission, *Hearing on Current and Emerging Technologies in U.S.-China Economic and National Security Competition*, February 1, 2024.

controlled NVIDIA chips for AI training via AWS and other cloud providers.[183] Also in August 2024, the *Wall Street Journal* reported on a company in Australia which, with the help of investors from Dubai and the United States, set up a cloud service powered by NVIDIA's advanced H100 chips at least in part to process AI algorithms for Chinese-based companies.[184] An executive at the company explained the decision to target China: "There is demand. There is profit. Naturally someone will provide the supply."[185]

The United States has begun to explore how to combat China's use of cloud computing for access to AI technologies, but solutions to date all have significant limitations. First, to prevent Chinese companies from simply setting up AI infrastructure outside of China and using it there (or making it available in China), existing export controls on advanced semiconductors apply to Chinese entities even when they are operating overseas.[186] Second, so-called "U.S. persons" authority would prevent U.S. cloud providers from knowingly providing services that contribute to certain specified national security risks, including helping Chinese entities obtain access to advanced semiconductor technology.*[187] Third, on an ad hoc basis, the U.S. government appears to be using various points of leverage to persuade domestic technology providers and their potential foreign partners that want access to the most advanced semiconductor technology to take measures to exclude Chinese entities.[188] Fourth, the United States has proposed "know your customer" rules and reporting requirements for domestic cloud providers when their services are used by foreign entities to train large AI models.[189] Each of these rules or proposals, however, has some limitations in scope, coverage, and/or comprehensiveness—for example, applying only to Chinese companies, only to U.S. companies, or only on an ad hoc basis.† There is currently no comprehensive authority akin to export controls for broadly restricting access to cloud services reliant on U.S. technology.

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*Originally, the "U.S persons" authority only applied to limit activities of U.S. persons that contribute to proliferation of weapons of mass destruction. ECRA expanded the coverage to include support for "foreign military intelligence services." Congress significantly expanded this authority again in 2022 to allow BIS to prohibit U.S. persons from knowingly providing support to adversarial foreign military services, intelligence services, and security services. In July 2024, BIS proposed a rule to implement the new authority that would significantly expand the scope of "U.S. persons" restrictions to cover a broad class of "foreign security end users." According to Gibson, Dunn, & Crutcher LLP, a multinational law firm, the breadth of the restrictions will likely necessitate the enhancement of company diligence efforts to better understand end users, with cloud service providers potentially needing to ensure that U.S. persons are not providing prohibited services or support for restricted parties. U.S. Department of Commerce Bureau of Industry and Security, "Export Administration Regulations: Crime Controls and Expansion/Update of U.S. Persons Controls," *Federal Register* 89:145 (July 29, 2024); Restrictions on Specific Activities of "U.S. Persons," 15 C.F.R. § 744.6, 2024; National Defense Authorization Act for 2023, Pub. L. No. 117-263, 2023; 50 U.S.C. § 4812(a)(2)(F); Gibson, Dunn, and Crutcher LLP, "Proposed Rules Call for Significant Restrictions on Facial Recognition Technologies, Defense Services, U.S. Persons Activities, and New Classes of Foreign End-Users," August 13, 2024; Export Control Reform Act (ECRA) §1741(2), Pub. L. No. 115-232, August 13, 2018, codified as amended at 50 U.S.C. §4801(2).

†The United States has used sanctions as a tool to limit certain types of technology-related transactions with an adversary, including the provision of certain cloud services. Specifically, in response to Russia's war of aggression against Ukraine, the U.S. Department of the Treasury's Office of Foreign Assets Control prohibited "U.S. persons" located anywhere in the world from exportation, reexportation, sale, or supply, directly or indirectly, of quantum computing services to any person located in Russia. This action prohibits U.S. cloud services companies from supporting Russia's quantum computing sector. Stefan H. Reisinger and Mikkaela Salamatin, "New US Sanctions and Export Restrictions on Russia and Belarus," *Norton Rose Fulbright*, September 2022; U.S. Department of the Treasury, Office of Foreign Assets Control, Determination Pursuant to Section 1(a)(ii) of Executive Order 14071: Prohibitions Related to Certain Quantum Computing Services, September 15, 2022.

CCP Control and Xi Jinping Thought May Constrain China's AI Models

China risks inhibiting its AI ambitions by its tight regulations on LLMs. Heavily censored datasets can lead to biases in AI models and limit their ability to handle certain tasks.[190] In April 2023, the Cyberspace Administration of China (CAC) unveiled its draft measures on generative AI services.[191] The CAC will require companies to go through a government security review process and make companies responsible for the content their AI services generate, such as prohibiting content the CCP views as politically sensitive, including arbitrary and broad definitions of subverting state power, inciting secession, or disrupting social order.[192] Additionally, the CAC requires companies to test whether the models can provide "safe" answers to users by preparing between 20,000 and 70,000 questions.[193] Companies must also submit a dataset of 5,000 to 10,000 questions the model will decline to answer, roughly half of which relate to political ideology and criticism of the Communist Party.[194] Xu Chenggang, a senior research scholar at the Stanford Center on China's Economy and Institutions, has asserted that China's strict censorship rules could inhibit the quality of data and the development of chatbots, stating that "if there are restrictions everywhere in the setup of your algorithms, of course its ability will be restricted."[195]

China is also developing a closed-source LLM based on Xi Jinping's political philosophy in a move that demonstrates the CCP's desire to experiment with centralized control over AI as a strategic asset. The machine learning language model was launched by the China Cyberspace Research Institute, which operates under the CAC.[196] Answers are sourced from a fixed pool of Chinese official documents and outlets.[197] The model is still undergoing internal testing and was not yet available for public use, but it is open to "designated users by invitation," according to the CAC.[198]

China Seeks to Create Advanced Generative AI Models to Outcompete the United States

The third element of AI competition is the quality of generative AI models. Generative AI models can transmit algorithms into text, images, audio, video, and code, enabling the creation of new content.[199] Although assessing AI models "is an art, not a science… making it difficult to compare Chinese models with global leaders," most experts believe the United States currently leads China in this space.[200] China's demonstrations of its generative AI models in early 2023 failed to outperform U.S. models like ChatGPT.[201] Baidu's ERNIE Bot launch, which relied on prerecorded examples rather than a live demonstration, was largely seen as a flop.[202] Erniebot and Alibaba's Tongyi Qianwen also both performed worse than ChatGPT in writing computer code.*[203] More than a dozen tech industry in-

*For example, Robin Li, Baidu's chief executive, admitted halfway through a "live" demonstration of Ernie that it was prerecorded. In June 2023, however, Baidu claimed that its Ernie 3.5 model outperformed OpenAI's ChatGPT and GPT-4 across numerous metrics, such as answering over 13,000 multiple-choice questions across 50 different subjects in Chinese more correctly. However, when the model took a separate test that was developed by a group of U.S. universities, the

siders and leading engineers interviewed by the *New York Times* in February 2024 said the generative AI capabilities of Chinese companies still lag behind those of U.S. companies by at least a year, with the article claiming that Chinese companies rely almost entirely on underlying systems from the United States.[204] In April 2024, Alibaba chairman Joe Tsai said that Chinese firms lag behind U.S. peers in AI development by at least two years.[205]

Chinese companies are making a concerted effort to develop generative AI models similar in sophistication to those of U.S. companies.[206] China's AI development landscape is diverse, with approximately 50 Chinese companies developing AI models as of June 2024, compared to the relatively small number of large companies in the United States that focus on developing models such as OpenAI, Google, and others.[207] As of late September 2023, China accounted for 40 percent of all LLMs in the world (while the United States has 50 percent), according to brokerage and investment group CLSA.[208] By June 2024, analysts asserted that by some metrics, Baidu's ERNIE Bot and Zhipu AI's GLM-4 had reached a similar level of quality as Open AI's GPT-4 model. Due to the evolution of leading-edge models and soon-to-be-released models like GPT-5, these analysts assert that benchmarking remains a moving target, which may also pose challenges for Chinese AI firms in developing metrics to assess their own capabilities.[209] Baidu's CEO Robin Li said in July 2024 that there are "too many" LLMs in China, which he says have resulted in a "significant waste of resources, particularly computing power"; he also questioned how many of these have provided real-world applications that are beneficial.[210]

The Open vs. Closed Debate and U.S.-China Competition

As the United States and China compete for technological leadership in AI, there have been concerns raised as to whether open source AI models may be providing Chinese companies access to advanced AI capabilities that would not otherwise be available, allowing them to catch up to the United States more quickly.

The debate surrounding the use of open source models and closed source models is a vigorous one within the industry, even apart from issues around China's access to the technology. Advocates of the open source approach argue that it promotes fast-

Ernie 3.5 model performed behind ChatGPT and GPT-4. Yasheng Huang, a professor of management at the Massachusetts Institute of Technology, said of China's efforts to build ChatGPT-level chatbots that "China is incredibly good at scaling an existing invention, but it is not very good at making breakthroughs." The Ernie bot has still become a popular option for generative AI use, as Baidu claimed in April 2024 that its platform has over 200 million users. Additionally, the Beijing Academy of Artificial Intelligence's WuDao 2.0, released in the summer of 2021, was touted by *Forbes* as a "bigger, stronger, faster AI" due to having ten times more parameters (the numbers inside an AI model that determine how it processes information) than GPT-3. However, AI experts Helen Toner, Jenny Xiao, and Jeffrey Ding assert that having more parameters "does not make one AI system better than another" if it is not matched with corresponding increases in data and computing power, and they also argue that the Chinese researchers who posed questions to the model helped boost its performance to appear stronger. Tracy Qu, "Baidu Says Ernie AI Chatbot Now Has 200 Million Users," *Wall Street Journal*, April 16, 2024; Arjun Kharpal, "China's Baidu Claims Its Ernie Bot Beats ChatGPT on Key Tests as A.I. Race Heats Up," *CNBC*, June 27, 2023; Helen Toner, Jenny Xiao, and Jeffrey Ding, "The Illusion of China's AI Prowess," *Foreign Affairs*, June 2, 2023; Cheyenne Dong, "Alibaba Rolls Out ChatGPT Alternative Tongyi Qianwen," *Technode*, April 10, 2023; Chang Che and John Liu, "China's Answer to ChatGPT Gets an Artificial Debut and Disappoints," *New York Times*, March 16, 2023; Alex Zhavoronkov, "Wu Dao 2.0 - Bigger, Stronger, Faster AI from China," *Forbes*, July 19, 2021.

The Open vs. Closed Debate and U.S.-China Competition—*Continued*

er innovation by allowing a wider range of users to customize it, build upon it, and integrate it with third-party software and hardware.[211] Open model advocates further argue that such models reduce market concentration; increase transparency to help evaluate bias, data quality, and security risks; and create more benefits for society by expanding access to the technology.[212] Advocates of the closed source approach argue that such models are better able to protect safety and prevent abuse, to ensure faster development cycles, and to help enterprises maintain an edge in commercializing their innovations.[213]

From the standpoint of U.S.-China technology competition, however, there is one key distinction: open models allow China and Chinese AI companies access to key U.S. AI technology and make it easier for Chinese companies to build on top of U.S. technology. In July 2024, OpenAI, a closed model, cut off China's access to its services.[214] This move would not have been possible with an open model; open models, by their nature, remain open to Chinese entities to use, explore, learn from, and build upon.[215] And, indeed, early gains in China's AI models have been built on the foundations of U.S. technology—as the *New York Times* reported in February 2024, "Even as [China] races to build generative A.I., Chinese companies are relying almost entirely on underlying [open model] systems from the United States."[216] In July 2024, at the World Artificial Intelligence Conference in Shanghai, Chinese entities unveiled AI models they claimed rivaled leading U.S. models.[217] At the event, "a dozen technologists and researchers at Chinese tech companies said open-source technologies were a key reason that China's A.I. development has advanced so quickly. They saw open-source A.I. as an opportunity for the country to take a lead."[218]

China Leverages Data for AI and Technological Supremacy

The U.S.-China competition in AI technology is dependent on who can procure and compile large-scale, high-quality datasets and create economic incentives and frameworks for sharing data. Access to proprietary data in different sectors can be an increasingly important source of competitive advantage because better results can be acquired by more relevant, real-world data that can be used to train the AI models, which has a net impact on the cycle and speed of innovation.[219] With the rising importance of data to governments, corporations, and next-generation technologies like generative AI and large models, data are quickly becoming the "new oil" that power AI and the global economy.[220]

The Importance of Data to China's Policymakers

Since Xi's 2012 appointment as China's President, Party leaders have swiftly identified data as a critical component for developing China's economic and technological capacity.[221] This was formalized as policy in the 2016 State Council National 13th Five-Year Plan

for the Development of Strategic Emerging Industries, which called for the construction of a "digital China" based upon the integration and leveraging of data, data technology, data standards, and data connectivity throughout China's economic and technological infrastructure.[222] The importance of data was further highlighted by Xi in subsequent Party speeches and study sessions, where he emphasized to policymakers that China must "build a digital economy with data as a key enabler" and "promote the deepened integration of Internet, big data, and artificial intelligence with the real economy."[223] Building off these policies and presidential directives, in 2020, China's State Council named data "factor[s] of production," codifying data—along with land, labor, capital, and technology—as crucial to China's economic development and requiring Party supervision to ensure economic development and avoid market distortions.*[224]

Efforts to Turn Data into a Factor of Production

Alongside Xi's directives and official policies mandating the importance of data, in March 2023, China established a new government administration: the National Data Administration (NDA).†[225] Since its formation, the NDA has been given economic portfolio responsibilities that were previously held by domestic and national security-minded government organs, chiefly the Cyberspace Administration of China.[226] So far, the economic mandate of the NDA has been to establish the economic value of data assets, increase data circulation throughout China, and develop data market ecosystems for key industrial fields such as smart manufacturing.[227] The NDA's newly appointed leader, Liu Liehong, has also made it a point of emphasis to meet with China's leading tech companies, such as iFlytek and Didi, to discuss how best to share, monetize, and ensure data property rights on the vast amounts of data they hold.[228]

China's data exchanges will be critical to the NDA's efforts to turn data into a factor of production. Broadly speaking, data exchanges are centralized markets for buying and selling data, data products, and data services.[229] China's first data exchange was set up in Guiyang in 2015; since that time, 48 data exchanges are now active in the country.[230] While in the United States these take the form of private third-party data brokers who aggregate public or private data for sale, China's data exchanges are state-managed by local governments, with the goal of building a cohesive national "data economy."‡[231] Alongside data exchanges, China has also experimented with using its 21 free trade zones to facilitate companies that wish to export "cross-border data."[232] While still in the early stages, the development of China's data exchanges and free trade zones is part of a larger goal of constructing a "big data industry,"

*The term "factors of production" is generally seen as a key economic resource to be managed by the Party in order to avoid market distortions. Rebecca Arcesati, "China Activates Data in the National Interest," *Mercator Institute for China Studies*, July 4, 2022; Lillian Li, "Abridged: Data as a Factor of Production," *Chinese Characteristics: Substack*, November 4, 2021.

†The NDA sits under China's macroeconomic planner, the National Development and Reform Commission. Rebecca Arcesati and Jeroen Groenewegen-lau, "China's Data Management: Putting the Party-State in Charge," *Mercator Institute for China Studies*, 2023.

‡The United States and China have different models for data exchanges. Amba Kak and Samm Sacks, "Shifting Narratives and Emergent Trends in Data-Governance Policy," *Paul Tsai China Center, AI Now, New America*, August 2021; Julia Lu, "China's Data Exchanges, Explained," *Technode*, August 17, 2021.

promoting international digital trade, and developing China's digital economy.[233]

China's Authoritarian Practices May Provide an Edge in Certain Types of Data

China's efforts to create a national data economy has significant implications for both its leading technology firms and the development of AI itself. Experts have debated the general advantages that the United States and China have regarding data and how these advantages may affect their AI capabilities. According to Matt Sheehan, a fellow at the Carnegie Endowment for International Peace, in terms of quantity, China's advantage mainly lies in the fact that its leading tech companies have many more windows into a user's online and offline behaviors.[234] China also holds an advantage in terms of compiling data from public spaces, gathered from the country's vast public surveillance network, which has given China's facial recognition AI firms some advantages.[235] Prominent scholars have also raised concerns that China's "AI-Surveillance symbiosis" could lead to a "feedback loop" with data derived from surveillance leading to iterative improvements in AI innovation.[236] Furthermore, China's broad government collection of data could be used to enhance the datasets of Chinese firms across a variety of other important domains, including healthcare, education, and basic science.[237] The prevalence of Chinese companies in genomics, agricultural, and certain health-related biotechnology supply chains could provide a significant data advantage in generative AI models geared toward those technologies. (For more information on recent developments in China allowing local government entities to treat data as a financial asset, please see Chapter 1, "U.S.-China Economic and Trade Relations (Year in Review).")

U.S. companies and bureaucracies have a lead regarding the quality of data.[238] China has not invested as much in enterprise software or digitizing data, although this may change over time as Beijing is incentivizing localities to digitize records and adopt AI-powered analytical tools.[239] Regarding diversity of data, the United States holds a clear advantage because of its diverse domestic population and the global user base of many Silicon Valley companies.[240]

Other Aspects of AI Competition: Workforce and Research Output

China is attempting to advance its AI workforce in order to compete with the United States. China has developed AI talent partly because it invested heavily in AI education.*[241] China has created over 2,000 undergraduate-level AI programs at more than 300 of the country's most elite universities since 2018.[242] Data regarding global AI talent published by the think tank MacroPolo revealed that in 2022, 57 percent of "elite" AI researchers (i.e., the top 2 percent) worked in the United States as opposed to 12 percent in China, compared to 65 percent and less than 3

*CSET reported in February 2023 that collectively, at least $40.2 billion in announced investments into 251 Chinese AI companies involved U.S. investors, though it was not clear what exact portion of the $40.2 billion came from U.S. investors (e.g., an announcement may list multiple investors and a headline number, without breaking down the contribution of each). Emily S. Weinstein and Ngor Luong, "U.S. Outbound Investment into Chinese AI Companies," *Center for Security and Emerging Technology*, February 2023.

percent in 2019, respectively.[243] For "top-tier" talent (i.e., the top 20 percent), 42 percent worked in the United States in 2022 and 28 percent in China, compared to 59 percent and 11 percent in 2019.[244] According to a November 2023 report by CSET, 78 percent of China's AI-related job postings are geographically concentrated in three economically and technologically developed hubs with large population centers, including the Yangtze River Delta region, the Pearl River Delta, and the Beijing-Tianjin-Hebei area, while other provinces with relatively high demand for AI talent include Hubei, Shandong, and Hunan.[245]

Regarding AI research, the comparison between the United States and China depends on the metric chosen. China leads the United States based on sheer volume of research published—with 575,258 articles to the United States' 359,415 articles.[246] The Commission's *2023 Annual Report to Congress* examined at length, however, why publication volume is a flawed metric at best for measuring the progress of Chinese academia in advanced technologies like AI.[247] Plagiarism, error, and fraud have long plagued Chinese higher education, with China having the largest retraction rate globally of submitted research papers, exceeding 20 per 10,000 papers submitted.[248] The number of citations and number of international research collaborations may be better indicators of a country's progress in AI research. In these areas, the United States is still the global leader as of September 2024, with U.S. AI papers receiving 13,296,404 citations compared to China's 8,830,282 citations.[249] The United States also leads in global AI research collaboration with 132,672 articles published with international collaborators, though China is not far behind with 114,333 such articles.[250] A recent study also points to a large "diffusion deficit" between the United States and China in AI, with China struggling to adopt AI innovations at scale in academia and industry.[251]

China Engages on AI Safety Talks but Shuns Military AI Policy

Beijing has taken limited steps to engage with the United States on the issue of global AI risks and safety. In November 2023, Beijing attended the UK AI Safety Summit and agreed to share a common approach to identifying and mitigating AI risks with the EU, the United States, and 26 other countries.[252] The same month, President Joe Biden and General Secretary Xi met and agreed to hold talks regarding the risks of advanced AI systems and efforts to improve AI safety.[253] In March 2024, Beijing supported a U.S.-led, nonbinding UN resolution on the protection of data and monitoring of AI risks.[254] Chinese and U.S. officials also met behind closed doors in Geneva in May 2024 to discuss how each side views AI risks and safety.[255]

Despite its surface-level engagement in AI safety talks, China has shown little willingness to make firm commitments on limiting the military applications of AI. In December 2021, China submitted a position paper to the UN calling on all countries to refrain from using AI to "seek absolute military advantage" or "pursue hegemony," but it did not rule out its use for "legitimate

China Engages on AI Safety Talks but Shuns Military AI Policy—*Continued*

national defense capabilities."[256] This caveat regarding the use of AI for "legitimate national defense capabilities" could suggest Beijing envisions using AI-enabled weapons and processes in military operations to defend what it regards as its "core interests," including the forcible unification of Taiwan.[257] China did not support a U.S.-led declaration on the responsible military use of AI during November 2023.[258] Chinese officials did not publicly respond to a statement made by Principal Deputy Assistant Secretary of State Paul Dean in May 2024 that the United States welcomed a clear and strong commitment from both China and Russia to ensure that only humans, not AI, would control nuclear weapons.[259]

China Pursues AI for Military Applications

AI will serve as a core part of China's future military strategy, underpinning the PLA's efforts to exploit vulnerabilities in the technology systems the United States deploys on the battlefield and to make operational decisions more quickly than U.S. warfighters.[260] (For more on the PLA's approach to informationized warfare, see Chapter 8, "China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies.") Procurement records and writings by Chinese military experts in recent years suggest the People's Liberation Army (PLA) is already procuring AI systems for integration into its weapons platforms and capabilities.[261] One report by CSET comparing U.S. and Chinese military procurement of AI systems found that both militaries are focusing on similar applications, with most contracts being awarded for autonomous vehicles and intelligence, surveillance, and reconnaissance (ISR).[262] Of the almost 2,000 military contracts awarded by the PLA between April and November 2020, 119 contracts appeared to be directly related to AI, the majority of which were related to AI-enabled autonomous vehicles (38 percent), followed by ISR systems (17 percent), predictive maintenance and logistics systems (16 percent), information and electronic warfare (7 percent), simulation and training (4 percent), automatic target recognition (4 percent), and command and control (4 percent).*[263] This analysis reflects only a dated snapshot of unclassified procurement and precedes the significant increase in awareness around AI since the public release of ChatGPT—so it should be treated accordingly.[264] In any event, it is clear China is actively pursuing AI for military applications to enhance its capabilities, complement its current approach to informationized warfare, and facilitate the PLA's longstanding efforts to leapfrog the United States militarily and shift the global balance of power.[265]

*CSET categorized the remaining 10 percent of contracts as "other." Margarita Konaev et al., "U.S. and Chinese Military AI Purchases: An Assessment of Military Procurement Data between April and November 2020," *Center for Security and Emerging Technology*, August 2023, 8.

AI as the Eyes and Ears of the PLA

AI-enabled ISR systems appear to be a priority for the PLA.[266] The PLA sees value in leveraging AI capabilities for ISR to help speed up the processing of imagery, signals, and other kinds of intelligence across the land, air, sea, and space domains.[267] PLA experts have recognized that ISR improved by AI can be useful in detecting the movements of an adversary's conventional military assets as well as tracking its submarine and land-based nuclear forces.[268] China's incorporation of effective AI into its ISR capabilities could allow the PLA to rapidly locate U.S. military forces during a conflict over Taiwan or the South China Sea and help it combine joint forces across domains to launch precision strikes.[269]

According to the CSET report, most of the PLA's known contracts for AI-enabled ISR are awarded by the PLA Navy, and many focus on geospatial imagery tasks such as equipping satellites with image collection, polarized surface detection, and multi-source data fusion tools powered by machine learning.[270] A December 2023 article in Chinese state media provided one example of a platform that may integrate AI into ISR, noting that the Aviation Industry Corporation of China planned to incorporate AI into the Wing Loong unmanned aerial vehicle platform to improve the drone's ability to perform tasks like topographic mapping, among other things.[271] Other PLA contracts appear to focus on incorporating AI into air defense. For example, the Hebei Xintu Technology Company was awarded a contract by the PLA for a "drone aircraft detector" to be used in air defense.[272]

AI in Battlefield Decision-Making

Beijing is researching how AI can be utilized in decision-making to enhance wargaming and command and control. At least based on the relatively small percentage of procurements reflected in CSET's data snapshot, the PLA does not appear to be prioritizing these uses as much as other applications.*[273] Chinese experts note that AI can shorten the "observe-orient-decide-act"† loop, raise situational awareness, and assist PLA commanders in formulating judgments, planning missions, and controlling operations within increasingly complex warfare environments.[274] These include:

- *Reluctance to cede political control over military decision-making:* The Central Military Commission exercises the Party's political control over all military affairs and has historically maintained a tight grip on the use of the PLA's strategic as-

*As noted, this was a limited study, based on a 2020 subset of 119 PLA contracts for AI systems. The study found that only 4 percent of these contracts were related to battlefield decision-making systems and that China awarded just five contracts for command and control application systems between April and November 2020. It is not clear if the short "snapshot" reflects overall PLA priorities and spending patterns. Margarita Konaev et al., "U.S. and Chinese Military AI Purchases: An Assessment of Military Procurement Data between April and November 2020," *Center for Security and Emerging Technology*, August 2023, 14; Ryan Fedasiuk, Jennifer Melot, and Ben Murphy, "Harnessed Lightning: How the Chinese Military Is Adopting Artificial Intelligence," *Center for Security and Emerging Technology*, October 2021, 24–26.

†The observe-orient-decide-act (OODA) loop is a decision-making concept developed by U.S. Air Force Colonel John Boyd. The concept is designed to provide a disciplined means of thinking about events that are unfolding before military decision-makers. The concept is intended to help the military gain a decisive advantage in the decision-making process by dealing with situations in a more expedited fashion. Kimberly Wright, "OODA Loop Makes Its Mark on Maxwell," *Air University Public Affairs*, August 25, 2010.

sets, such as nuclear weapons and cyber capabilities.[275] While advances in AI will give Chinese leaders new technologies to assist decision-making, Chinese officials may be reticent to defer to AI-generated recommendations for military decision-making. Yang Zi, a PhD candidate at the S. Rajaratnam School of International Studies, argues that Xi's personal preferences are still likely to overshadow AI-generated recommendations and that such a dynamic could handicap the PLA's AI-enabled decision-making in a crisis scenario.[276] Tong Zhao, a senior fellow in the nuclear policy program at Carnegie China, has observed that China's policy community also supports keeping humans "in the loop" and limiting the use of AI in nuclear weapon systems for safety reasons.[277]

- *Concerns that limited data training and visibility into AI algorithms could distort military decision-making:* One challenge for the PLA going forward will be training AI algorithms to account for complex battlefield scenarios, in part because the PLA lacks data from real wars.[278] Without adequate data based on actual combat scenarios gained while fighting an adversary, AI models could potentially provide false assessments or erroneous recommendations to military officials.[279] In order to maximize performance, the PLA will also need to train its AI algorithms to analyze variables in realistic natural environments, such as the weather or atmospheric conditions, and in artificial environments, like defensive networks or battle lines.[280] The PLA likely recognizes the problems associated with this data deficit, but it is unclear what steps it is taking to rectify it. For example, it is not clear if China and Russia are using Russia's war of aggression in Ukraine as a data source.
- *Concerns that AI-enabled decision-making could exacerbate risks in conflict with the United States:* Experts from both the United States and China have recognized that the integration of AI into military decision-making systems could accelerate a crisis by facilitating hasty decision-making.[281] Furthermore, experts from both countries have assessed that the adversary may deliberately "poison" the data used by the other side, which may degrade the performance and judgments of their AI systems.[282] These concerns may make Chinese leaders more reticent to rely on AI to make high-stakes military judgments.

AI to Enhance Combat Performance and Lethality

The PLA is exploring the use of AI to enable autonomous systems for battlefield support and to increase the lethality of military units by carrying out warfighting tasks traditionally conducted by humans.[283] China is researching and developing AI technologies that seek to enhance the target recognition and coordination of lethal autonomous weapons, which are weapons systems that use sensor suites and computer algorithms to identify targets and subsequently engage and destroy the target without manual human control.[284] Lethal autonomous weapons systems are not yet in widespread development, but they could someday enable military operations in communications-degraded or -denied environments where traditional systems may not be able to operate.[285] Platforms that

are classified as lethal autonomous weapons systems include missile defense systems, sentry systems, and loitering munitions.[286] AI systems performing automatic target recognition made up only 4 percent of PLA contracts in the limited CSET snapshot of public contracts examined, but there are early signs that Chinese defense manufacturers are designing systems that could someday actualize the lethal autonomous weapons concept.*[287] For example, one Chinese manufacturer of intelligent unmanned aerial systems known as Zhuhai Ziyan UAS has produced the Blowfish A2, an unmanned helicopter equipped with guns, bombs, radar technology, and jamming devices.[288] The Blowfish A2 reportedly uses an AI module to automatically identify multiple targets such as ships, vehicles, and personnel to assist PLA combat units in carrying out attacks and reconnaissance missions.[289]

AI in Disinformation and Cognitive Warfare Operations

A major area of U.S.-China competition within AI is large language models, or LLMs,† which China could deploy against the United States in cognitive warfare operations.‡[290] China has engaged in online influence operations against the United States for years and appeared to escalate large-scale online influence operations on U.S.-based social media platforms since 2019, when Meta and X (formerly known as Twitter) first attributed inauthentic accounts originating from China.§[291] Nathan Beauchamp-Mustafaga, a senior policy researcher at the RAND Corporation, testified before the Commission that AI could significantly enhance China's existing cyber-enabled influence operations.[292] Mr. Beauchamp-Mustafaga argued that generative AI could dramatically improve the authenticity, cost effectiveness, and scale of state-sponsored influence oper-

*An automatic target recognition system is not necessarily a lethal autonomous weapon system, as human intervention could still be a necessary step in the decision to use lethal force against the recognized target.

†LLMs are mathematical representations of patterns found in natural language that can create text, answer questions, and hold conversations by making inferences about subsequent words in sentences. LLMs power generative AI tools such as OpenAI's ChatGPT and Google's Bard. Generative AI refers to algorithms that can be used to create new content, including audio, images, text, simulations, and videos. McKinsey and Company, "What Is Generative AI?" *McKinsey and Company*, April 2, 2024; Katrina Manson, "The US Military Is Taking Generative AI Out for a Spin," *Bloomberg*, July 5, 2023; William Marcellino et al., "The Rise of Generative AI and the Coming Era of Social Media Manipulation 3.0: Next-Generation Chinese Astroturfing and Coping with Ubiquitous AI," *RAND Corporation*, 2023, 5–6.

‡Cognitive warfare consists of influencing international public opinion, shocking and demoralizing enemy soldiers and citizens through psychological operations, and conducting influence campaigns to shape international law in Beijing's favor. LLMs and text-to-image models are also well suited to social media manipulation due to their ability to produce convincing text and images—with little effort by the user—that can then be disseminated online. William Marcellino et al., "The Rise of Generative AI and the Coming Era of Social Media Manipulation 3.0: Next-Generation Chinese Astroturfing and Coping with Ubiquitous AI," *RAND Corporation*, 2023, 7; Koichiro Takagi, "The Future of China's Cognitive Warfare: Lessons from the War in Ukraine," *War on the Rocks*, July 22, 2022.

§For example, in March 2020, China-linked accounts disseminated false warnings about a nationwide COVID-19 lockdown to allegedly incite public panic within the United States and decrease trust with the U.S. government. A September 2023 report by the U.S. Department of State's Global Engagement Center noted that aside from narratives on COVID-19, China has also carried out disinformation campaigns about the AUKUS partnership as well as echoing Russia's false accusations that the United States is escalating the war in Ukraine. U.S. Department of State, *How the People's Republic of China Seeks to Reshape the Global Information Environment*, September 28, 2023, 26, 38; Edward Wong, Matthew Rosenberg, and Julian E. Barnes, "Chinese Agents Helped Spread Messages That Sowed Virus Panic in U.S., Officials Say," *New York Times*, January 5, 2021; Sarah Cook, "Welcome to the New Era of Chinese Government Disinformation," *Diplomat*, May 11, 2020.

ations by malign actors while reducing human labor requirements and the probability of detection.[293]

Similarly, reporting by Microsoft has established that an actor affiliated with China's domestic security services has used AI to spread disinformation in democracies such as the United States and Taiwan.[294] In April 2024, Microsoft reported that the CCP-linked actor Storm-1376 (also known as "Dragonbridge" or "Spamouflage") has used AI-generated content to conduct influence operations spanning 175 websites and 58 languages.[295] Storm-1376 was reportedly responsible for spreading conspiratorial narratives on multiple social media platforms, alleging that the U.S. government had deliberately initiated the wildfires on the northwest coast of Maui, Hawaii.[296] Storm-1376 also targeted Taiwan's 2024 presidential and legislative elections, attempting to undermine the legitimacy of multiple candidates, including now president William Lai, in what Microsoft claimed was the first time AI had been used to influence a foreign election.*[297] (For more information on China's attempts to influence Taiwan's elections, see Chapter 9, "Taiwan.")

In their writings, PLA researchers have shown interest in using generative AI for future cognitive warfare operations.[298] In 2020, for example, two PLA researchers argued in the *China Military Science* journal that deepfakes using AI are cheap and easy to create and require less time than other methods, asserting that improvements in machine learning will lead to their prevalence.[299] There is also evidence that PLA-affiliated researchers at Base 311, a Chinese military unit headquartered in Fuzhou Province that conducts cognitive warfare, have explored how the Chinese military can use AI to automatically generate authentic-looking content.[300]

China Developing Humanoid and Quadruped Robots

One of the areas AI is helping revolutionize is robotics. AI is helping accelerate the development of humanoid and quadruped robots, both in their ability to respond to human commands and in their capacity for fine and gross movement for expanded versatility.[301] For instance, China's state media has said that the application of LLMs can make humanoid robots more capable of possessing decision-making capabilities, although the connection between the robot's "brain" and its "limbs" is still awaiting new technological breakthroughs.[302] China's MIIT announced in October 2023 that the country would establish a world-class humanoid robot innovation system by 2025 and deploy humanoid robots in "real economy" industries such as manufacturing, build an in-

*In December 2023, Storm-1376 also promoted a series of AI-generated memes of Taiwan's then Democratic Progressive Party candidate William Lai with a countdown theme noting "X days" to take the Democratic Progressive Party out of power, as well as an AI-generated video of a woman claiming to "reveal" Mr. Lai's mistresses and illegitimate children and an AI-generated audio file claiming Mr. Lai was an informant in the 1980s. On election day in January, Storm-1376 posted suspected AI-generated audio clips of Foxconn owner Terry Gou, an independent candidate in the presidential race. The audio manipulated Mr. Gou's voice to make it sound as though he was endorsing another candidate in the presidential race, even though he never formally endorsed any presidential candidate in the race. During the same month, Storm-1376 also created and amplified a defamatory video series about then President Tsai Ing-wen using AI-generated news anchors and ByteDance's CapCut video editing app. Microsoft Threat Intelligence, "Same Targets, New Playbooks: East Asia Threat Actors Employ Unique Methods," April 2024, 6–8.

China Developing Humanoid and Quadruped Robots—*Continued*

ternationally competitive industrial industry, and expand the use of humanoid robots throughout society by 2027.[303]

The realistic timing for the wide-scale availability of fully functional humanoid and quadruped robots within China is not clear. Humanoid robot firms globally face technical obstacles, including the limited storage capacity of batteries that power the robots and the current technical limitations of components like actuators that allow the robot to move itself and manipulate other objects.[304] Far more progress is needed before humanoid robots will be able to reason through an unexpected situation and then act on it.[305] While China's capacity to achieve its goals in the stated time frames may be doubtful, if their overall efforts are successful, humanoid robots could have transformative implications across commercial industries, including manufacturing, agriculture, and healthcare and potentially for military and law enforcement as well.[306]

When sufficiently advanced, these rapidly developing humanoid robot technologies have serious implications for China's military capabilities. China's policy of military-civil fusion, which leverages commercial technologies for the advancement of China's military, blurs the boundaries of what would constitute a commercial or military product.[307] Chinese military analysts have put forth new theories of human-robot cooperation if the technology advances, such as replacing front-line soldiers with humanoid robots while humans maintain control of command and decision-making.[308] Chinese state media outlets claim that humanoid robots will change the organization and use of combat forces, since they can theoretically be mixed with humans and grouped separately according to combat missions and objectives; they can also be used for logistical support such as carrying equipment, for heavy construction tasks, or for planting and removing mines.*[309]

One example of military applications emerged in May 2024 during China's Golden Dragon-2024 joint military exercise with Cambodia, when the PLA unveiled a modified version of a quadruped robot "dog," the B1, made by Chinese robot maker Unitree.†[310] Equipped with a mounted assault rifle on its back, the quadruped can jump as well as follow and lead an infantry team.[311] One PLA soldier told Chinese state media that the quadruped robot could engage a target upon discovery, asserting that the technology will serve as a "new team member for our urban

*Former PLA officer and military commentator Fu Qianshao wrote in an online commentary in April 2024 that humanoid robots could aid the PLA in an invasion of Taiwan by replacing actual troops on the battlefield, which would reduce the risk of human casualties. Fu Qianshao, "The Rise of China's Humanoid Robot Industry Will Replace the People's Liberation Army in Performing Tasks, Making the Reunification Easier," (中国人形机器人产业崛起，代替解放军执行任务，让统一大业更), *Gaze into the Sky [NetEase Blog]*, April 15, 2024. Translation. *https://web.archive.org/web/20240430181509/https:/www.163.com/dy/article/IVQR04OO0535T18G.html*.

†According to Unitree's company website, a commercial version of the B1, which can be used for inspecting power plants, is equipped with AI capabilities that enable it to avoid collisions in real time, control switches, press buttons, and carry out other tasks. Unitree, "Recognition Devices + AI Algorithm Bring Unitree Power Robotic Inspectors to the Posts." *https://web.archive.org/web/20240601021926/https://shop.unitree.com/blogs/news/recognition-devices-ai-algorithm-bring-unitree-power-robotic-inspectors-to-the-posts.*

China Developing Humanoid and Quadruped Robots—*Continued*

attack and defense operations."[312] Unitree has claimed that it does not sell its products to the PLA, but the use of its product in a formal military exercise underscores the ease with which the PLA can potentially acquire products from civilian companies.[313]

In the future, China's demographic decline could lead to humanoid robots as replacements for an aging, shrinking workforce.[314] In the present, Chinese researchers are also exploring the use of humanoid robots for economic and commercial purposes. Humanoid robots in China are undergoing limited deployment in various sectors but are primarily being used for research, and reports indicate humanoid robot firms are not generating commercial sales yet.[315] However, rapidly declining costs of producing humanoid robots could allow for more widespread adoption.[316] A Goldman Sachs report from February 2024 estimates that the humanoid robot market could reach $38 billion by 2035, with 1.4 million units shipped, primarily for industrial settings.[317] The Goldman Sachs report also notes that the viability of "mass-produced, general-purpose humanoid robots… hasn't been proven yet."[318]

Quantum Information Science: The Next Frontier of U.S.-China Technology Competition

Quantum information science (QIS)* may eventually become a paradigm-shifting technology enabling computation and sensing at a speed and scale heretofore impossible. Quantum technology will enable a significant performance boost in processing that will potentially help solve complex problems more efficiently. Advancements in quantum technology could potentially revolutionize global supply chains by refining production processes, streamlining logistics, and optimizing resource allocation.[319] QIS also has significant military and national security implications. QIS can enable a state to decrypt an adversary's communications, improve the ability to locate and track an adversary's military assets, and process battlefield data faster than an opponent.[320] Arthur Herman, a senior fellow and director of the Quantum Alliance Initiative at the Hudson Institute, asserts that "the nation that enjoys quantum supremacy, will dominate the future of the global system," as the technology will offer significant advantages for business and national security.[321]

QIS can be grouped into three primary categories, each of which can be used for military and civilian-commercial applications: communications, sensing, and computing.[322] Quantum communications uses qubits, or photons of light that transmit data along optical cables, making communications extremely secure against eavesdropping and interception.[323]

*According to the Pacific Northwest National Laboratory, QIS seeks to understand how information is processed and transmitted using quantum principles, merging quantum mechanics, and information/computation theory. Quantum computers process information in the form of qubits, which may occupy intermediate values rather than using bits with a 1 or 0 value (like classical computers). Qubits operate cooperatively through quantum entanglement, which multiply interactions over billions of switches to create a powerful computer that can tackle computational challenges that classical computers cannot. Pacific Northwest National Laboratory, "What Is Quantum Information Science?"

Quantum sensing technologies analyze data at the atomic level, making them significantly more sensitive and accurate compared to conventional sensors.[324] In military applications, quantum sensing is used to help enhance imaging, radar, sub-surface sensing, and navigation capabilities (including in GPS-denied environments).[325]

Lastly, where a classical computer can solve a problem with multiple variables along a single path, quantum computers can explore multiple paths in parallel to scale their operations exponentially.[326] Quantum computing could enable countries to break through encryption methods used by adversarial governments and militaries, improve military logistics, enhance modeling and simulation, and rapidly increase the pace of scientific research.[327]

Experts differ on the likely timeframe over which the potential of QIS can be realized, and it varies across the three categories. While the field of quantum mechanics has been studied for over a century, applications in advanced technologies have entered or approached practical development only in recent years.*[328] Some experts assert that we are on the cusp of a new revolution in quantum technology, as experimental concepts are being actualized into technological breakthroughs.[329] The U.S. Defense Science Board has estimated that quantum sensing technology, which is generally considered by experts to be the closest to useful deployment, will have "operational utility" in the 2024 to 2029 timeframe.[330] In a response to a question for the record before the Commission, Edward Parker, physical scientist with the RAND Corporation, agreed with this assessment, stating that broadly speaking, quantum sensing is the most technically mature of the three subfields of QIS.[331] Dr. Parker noted that within quantum computing, technical approaches based on superconducting, trapped-ion, or neutral-atom qubits are more advanced than quantum computers based on photonic, silicon-spin, or topological qubits.[332] Furthermore, Dr. Parker stated that the highest-impact applications of quantum computing, such as decryption, are unlikely to arrive prior to 2030.[333] Boston Consulting Group reports that between 2025 and 2030, new quantum communications technologies will be adopted by private companies, and a growing number of quantum random number generator chips will become more prevalent in Internet of Things (IoT) infrastructure, while new quantum communications repeaters, memories, and error-correction algorithms will be adopted from 2030 onward.[334]

Because of its potential importance, both the United States and China are investing heavily into QIS and are the two leading countries by most relevant metrics.[335] In October 2020, Xi himself emphasized the importance of quantum technology, telling the CCP's Central Committee that the development of quantum science and technology "is of great scientific significance and strategic value" and that it is a "major disruptive technological innovation."[336] More recently, in August 2024, the United States said that QIS "holds the potential to drive innovations across the American economy, from

*Dr. Parker asserts that broadly speaking, the field of quantum technology "is still very nascent," with atomic clocks being the only quantum technology publicly known to be deployed by any nation's military. Edward Parker, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on Current and Emerging Technologies in U.S.-China Economic and National Security Competition*, February 1, 2024, 4.

fields as diverse as materials science and pharmaceuticals to finance and energy."[337]

The United States and China are competing heavily to outpace each other in QIS research.[338] China's quantum R&D is largely carried out in Hefei, Anhui Province, at state-funded laboratories, with additional support from several startups.[339] The Hefei National Laboratory for Physical Sciences at the Microscale (HFNL), affiliated with the University of Science and Technology of China, received $1.06 billion in laboratory funding in 2017, according to Chinese media reporting, with an additional (although not confirmed) funding package of $2.95 billion per year planned between 2017 and 2022.[340] Assuming this funding was provided as described, the figure for this single laboratory far exceeds the estimated annual R&D spending on quantum research for the entire country, listed in the 13th Five-Year Plan (2016–2020) at approximately $84 million, illustrating its importance as the center for China's development of quantum technologies.[341] In addition to this state laboratory, Hefei is also home to three of the eight major quantum startups in China, including Ciqtek, Origin Quantum, and QuantumCtek.*[342] Outside of Hefei, other major quantum startups include Kunfeng, Qasky, QuDoor, Shenzhou Quantum Communication Technology, and SpinQ.[343] Although other large Chinese technology companies—including Alibaba, Baidu, Huawei, Tencent, and ZTE—had invested in quantum technology R&D, Dr. Parker notes they appear to have reduced their investment in the field, with both Baidu and Alibaba closing their quantum research labs since November 2023.†[344]

The U.S. government is a primary funder of open QIS research domestically, growing significantly every year since the 2018 National Quantum Initiative.‡[345] The National Quantum Initiative Act authorized eight initiatives in QIS for sustained multiyear

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*Dr. Parker et al. assert that the largest difference between Chinese startups and their U.S. counterparts is that the Chinese companies have announced far less capital funding, with only $44 million in publicly identified capital for Chinese quantum startups compared to $1.28 billion for U.S. startups. Edward Parker et al., "An Assessment of the U.S. and Chinese Industrial Bases in Quantum Technology," *RAND Corporation*, February 2, 2022, 84.

†According to Dr. Parker, several of the large Chinese companies, such as Baidu and Tencent, had shut down their quantum computing efforts. He noted that Baidu announced it was selling all of its quantum computing hardware to a national lab, assessing that the concentration to national labs appeared to be consolidating even more in the six months prior to February 2024. Although Dr. Parker said he did not have great visibility into why Baidu made this decision, he speculated that the company assessed it would not be technically competitive in this field, as they were "far behind U.S. companies, did not seem to be catching up, and did not see it as a revenue generator." Dr. Parker argues that when discussing China as a whole, the country appeared to be doubling down on national laboratories, as none of the Chinese quantum technology companies seemed to be globally competitive. In Baidu's 2023 annual report to the U.S. Securities and Exchange Commission, the company acknowledges the impact of the Biden Administration's August 2023 executive order directing the Treasury Department to create an outbound foreign direct investment review program that will require reporting on (or in more narrow circumstances prohibit) investments by U.S. persons involving "covered national security technologies and products," including quantum information technologies, as well as the Treasury Department's Advanced Notice of Proposed Rulemaking. Baidu claims that "uncertainties on whether the outbound foreign direct investment review program will have a material impact on our business, results of operations, financial condition, and prospects." U.S. Securities and Exchange Commission, *Form 20-F*, March 15, 2024. 45–46; Edward Parker, oral testimony for U.S.-China Economic and Security Review Commission, *Hearing on Current and Emerging Technologies in U.S.-China Economic and National Security Competition*, February 1, 2024, 167.

‡The National Quantum Initiative is authorized through 2029, but certain programs within it had specific authorized appropriations levels only through FY 2023. National Quantum Initiative Advisory Committee, "Renewing the National Quantum Initiative: Recommendations for Sustaining American Leadership in Quantum Information Science," June 1, 2023.

funding, such as the National Science Foundation-led Institute for Hybrid Quantum Architectures and Networks and the Department of Energy's Co-design Center for Quantum Advantage.[346] The U.S. government provided actual budget expenditures for QIS R&D of $449 million in fiscal year (FY) 2019, $672 million in FY 2020, $855 million in FY 2021, and $1.03 billion in FY 2022, followed by $932 million of enacted budget authority for FY 2023 and a requested budget authority of $968 million for FY 2024.[347] Some of these expenditures have resulted in additional government support at the state level. For example, the U.S. Department of Commerce's Economic Development Administration announced $41 million in funding on July 2, 2024, for Elevate Quantum ("Elevate"), a private-public consortium seeking to advance quantum research in the Mountain West, which unlocked $77 million in funding for Elevate from Colorado and $10 million from New Mexico.[348] The United States also has a strong private industry in QIS with at least 182 firms, a majority of which (139 companies) are part of Quantum Economic Development Consortium (QED-C), established by the National Quantum Initiative.[349] As of 2021, 55 of these QED-C companies focus on computing, 20 focus on sensing, 12 focus on communications, and 40 deal with cross-cutting sectors of QIS.[350] The venture capital (VC) industry has been a significant source of funding for quantum in the United States, with sources indicating over $2.5 billion invested through 2022, though perhaps echoing the private sector investment decline in China, 2023 saw a significant decline of 80 percent in VC funding for quantum computing in the United States.[351]

Overall, Dr. Parker assesses that China's progress across the three main subdomains of QIS has made the country "impressively fast followers across many quantum technology areas" and that some experts regard China as the world leader in quantum communications.[352] A 2022 research report by Dr. Parker et al. comparing the quantum industrial bases of China and the United States found that the United States is the overall top producer of high-impact* scientific publications in QIS, most notably in the fields of quantum computing and sensing.[353] By contrast, China leads in high-impact quantum communications research.[354] In terms of institutional research capacity, as of 2020, China actually had a greater number of institutions working on quantum research across the three primary subdomains of QIS than did the United States, though the qualitative edge this may provide remains unclear (see Table 1).[355]

*RAND Corporation defines "high-impact" by the number of academic citations a publication receives. The authors of the report argue that "if a nation is a global leader in developing new quantum technologies, then its research activity will strongly impact the rest of the world's R&D as well." The report notes that a "widely accepted metric of research impact" is the number of citations a publication receives. Edward Parker et al., "An Assessment of the U.S. and Chinese Industrial Bases in Quantum Technology," *RAND Corporation*, February 2, 2022, 19.

Table 1: Number of U.S. and Chinese QIS Publishing Research Institutions

	United States			China		
Metric	***# of Labs****	***% of Pubs**†*	***H-index**‡*	***# of Labs***	***% of Pubs***	***H-Index***
Computing	1,236	21.5	104	1,592	22.4	61
Communications	581	12.2	39	1,288	38.6	51
Sensing	376	15.3	67	535	26.1	59

Note: The covered time period for the number of labs working on quantum technology is 2011–2020, while the percentage of publications and H-index scores cover 2019–2023.

Source: Edward Parker et al., "An Assessment of the U.S. and Chinese Industrial Bases in Quantum Technology," *RAND Corporation*, February 2, 2022, 34, 74; Jamie Gaida, Jenny Wong-Leung, and Stephan Robin, "Critical Technology Tracker," *Australian Strategic Policy Institute*, 2023.

However, these U.S. and Chinese leads in particular quantum areas may change, given the long timelines for implementation.

Below is a brief discussion of some areas of apparent progress in China on QIS. There may be a basis for skepticism regarding some of the claimed breakthroughs announced by Chinese researchers; when these have been questioned by U.S. scientists and experts, it is noted.[356]

- ***Potential progress in computing:*** Recent developments illustrate China's potential progress in quantum computing capabilities.
  - In September 2024, the *South China Morning Post (SCMP)* reported that Chinese scientists at Shanghai University had demonstrated the first effective attack using a quantum computer on the class of algorithms used in password-protection and encryption mechanisms common in military and financial networks.[357] The researchers used a quantum computer produced by Canadian company D-Wave Systems.[358] According to the authors, this study did not produce a passcode for the best available military-grade encryption like Advanced Encryption Standard (AES-256), but such a breakthrough may be closer than ever before.[359] The authors of the study did note that underdeveloped hardware and the incapability of a single attack algorithm to target multiple cryptographic systems presented practical constraints.[360]
  - Quantum experts agree that the study indicates "incremental advances in quantum computing" but also note that the SCMP article was misleading, as the study itself applied only to RSA encryption,§ not military-grade AES (Advanced En-

*Number of research institutions with at least one publication in each subfield from 2011 to 2020.

†Percentage of total global published research by Chinese researchers and institutions.

‡H-index (Hirsch Index) is commonly used to assess both the breadth and impact of research and is considered the best single metric for measuring research quality of a corpus of publications.

§The Rivest-Shamir Adleman (RSA) algorithm is a basic key encryption that is widely used to secure sensitive data. Michael Cobb, "RSA Algorithm (Rivest-Shamir Adleman)," *Tech Target*.

cryption Standard) encryption, and did not render current cryptographic systems obsolete.[361]

- In January 2023, a group of Chinese scientists claimed they used a combination of classical and quantum computing techniques to breach the RSA encryption algorithm used in military, banking, and communications systems.[362] Notably, the paper summarizing their findings asserts that the RSA algorithm could be broken with a quantum machine using only 372 qubits (which is less than IBM's world-class Osprey, operating with 433 qubits), potentially illustrating the efficiency of the Chinese quantum computer if the findings are true.[363] However, quantum researchers and scientists have offered mixed reviews of the paper, with Massachusetts Institute of Technology (MIT) scientist Peter Shor stating, "As far as I can tell, the paper isn't wrong" but that the Chinese researchers failed to demonstrate the speed with which the quantum algorithm would run, leaving questions regarding the degree of improvement.[364] At the time of the announcement, the *SCMP* noted that the paper had not been officially peer reviewed, and Scott Aaronson, director of the Quantum Information Center at the University of Texas at Austin, said the article was "one of the most actively misleading quantum computing papers I've seen in 25 years."[365]
- In June 2024, the Anhui Quantum Computing Engineering Research Center and QuantumCTek (the latter of which is a quantum company currently on the Commerce Department's Entity List)* jointly announced that their quantum computer dilution refrigerator is the first equipment of its kind commercially available for mass production in China.†[366] According to an article published by the *Anhui Daily*, the dilution refrigeration products were delivered to two scientific research units, and "after many months of testing by customers, the equipment has been operating continuously and stably for a long time."[367] (For more on the importance of certain refrigeration technology to QIS, see "The Global Quantum Supply Chain and Relevant U.S. Export Controls" below.)
- Origin Quantum‡ announced in May 2024 that it had successfully developed a high-density microwave interconnect module that domestic media has described as a "neural net-

*QuantumCTek also appears under the aliases of HKUST National Shield Quantum Technology Co., Ltd.; HKUST Guodun Quantum Technology Co., Ltd.; National Shield Quantum; and Anhui Quantum Communication Technology Co., Ltd. in the Commerce Department's Entity List. U.S. Department of Commerce, *Addition of Entities and Revision of Entries on the Entity List; and Addition of Entity to the Military End-User (MEU) List*, November 26, 2021.

†Heat causes errors in qubits that serve as the building blocks of quantum computers, necessitating the use of refrigerators that keep the temperature just above absolute zero. In Dr. Parker's oral testimony before the Commission, he asserted that "a surprising amount of quantum supply chain revolves around extremely powerful refrigerators." Edward Parker, oral testimony for U.S.-China Economic and Security Review Commission, *Hearing on Current and Emerging Technologies in U.S.-China Economic and National Security Competition*, February 1, 2024, 165; Adam Zewe, "A New Way for Quantum Computing Systems to Keep Their Cool," *MIT News Office*, February 21, 2023.

‡Origin Quantum was established in 2017 in Hefei, Anhui Province, by Guo Guancan, an academician of the Chinese Academy of Sciences, and Guo Guoping, who serves as deputy director of the Chinese Academy of Sciences Key Laboratory of Quantum Information and associate dean of the School of Microelectronics and the Institute of Advanced Technology at the University of Science and Technology of China.

work" for quantum computers.*[368] A major obstacle to the module's domestic production in China has been sourcing an ultra-low-temperature specialized high-frequency coaxial cable, which was previously imported from Japan.[369] This new device can allegedly provide microwave signal transmission channels for quantum chips with more than 100 bits and can achieve stable signal transmission across temperature zones in cool environments.[370] According to Kong Weicheng, a researcher at Origin Quantum, the module will allow quantum chips to exert "more powerful computational capabilities," which enable quantum computers to operate efficiently.[371]

- ***Potential progress in sensing:*** There are signs of progress in China's prototype quantum radars, which could advance the PLA's capability to detect foreign military assets.[372] In 2018, for example, the 14th Institute of the defense SOE China Electronics Technology Group Corporation announced that its quantum radar technology had successfully tested detecting targets up to 62 miles away, asserting that the technology is expected to solve bottleneck issues associated with traditional radars, such as low-visibility target detection, survival under electronic warfare conditions, and other challenges.[373] In 2021, a laboratory at Tsinghua University also tested a quantum radar that its researchers claimed was capable of increasing the probability of detecting stealth aircraft by generating a small electromagnetic storm.[374]
  - However, MIT professor Jeffrey Shapiro, one of the technology's inventors, has previously argued that there are problems with this approach that make it unfeasible.[375]
- ***Potential progress in communications:*** China has sought to create secure communications links through both ground-based stations and satellites.[376] Dr. Parker notes that Beijing may be seeking to build an internal communications system without any Western technologies, which reflects the Chinese leadership's anxiety about vulnerability to foreign espionage.[377] Chinese scientists have primarily focused their quantum communications R&D on a method known as quantum key distribution (QKD), which may improve communications security against enemy interception.[378] In 2021, China successfully tested the world's first integrated QKD network, combining a satellite link through the Mozi (Micius) satellite that connects two ground stations approximately 1,616 miles apart (which achieved QKD in 2016) as well as an optical fiber network stretching around 1,243 miles from Beijing to Shanghai (completed in 2017), providing a total distance of roughly 2,858 miles of coverage across China.[379] China launched its second QKD satellite in July 2022—known as Jinan 1—for additional experimentation

*This breakthrough was announced shortly after BIS added Origin Quantum and 21 other Chinese quantum organizations to its Entity List for "acquiring [and/or] attempting to acquire U.S.-origin items in support of advancing China's quantum technology capabilities." It is too early to assess the impact of BIS action on China's continuing ability to make quantum advancements. U.S. Department of Commerce Bureau of Industry and Security, "Additions of Entities to the Entity List," *Federal Register* 89 FR 41886 (May 14, 2024); Origin Quantum, "About Origin Quantum."

in low Earth orbit.[380] The Mozi satellite was used to establish a secure communications link with Russia in March 2022.*[381]

U.S. Response to Quantum National Security Risks

Unlike the broad, country-based controls imposed by the United States in the advanced semiconductor space, until September 2024, the U.S. policy response to QIS national security risks had been more limited perhaps due to the earlier stage of the technology and the possibility that many QIS uses are not military. Until that time, the United States had primarily taken an entity-based approach with respect to QIS-related export controls against China.†[382] In November 2021, the Commerce Department's Bureau of Industry and Security (BIS) added eight Chinese entities to the Entity List, including QuantumCTek, "to prevent U.S. emerging technologies from being used for the PRC's quantum computing efforts that support military applications" and citing potential uses in counter-stealth and anti-submarine applications as well for breaking encryption and developing unbreakable encryption.[383] In May 2024, BIS added another 22 Chinese institutes and firms to the Entity List, including Origin Quantum, for aiding China's quantum development.[384]

In September 2024, BIS issued a new interim final rule imposing worldwide export controls on "quantum computers, related equipment, components, materials, software, and technology that can be used in the development and maintenance of quantum computers."[385] BIS notes that the controls had been aligned with international partners; they are similar to those put in place this year by the UK, France, Spain, the Netherlands, and Canada, which some reporting suggests resulted from "Wassenaar minus 1" discussions.[386] The new BIS quantum controls also include provisions creating a licensing exception for countries that implement "equivalent national controls," thus incentivizing countries to adopt similar controls to ease their access to U.S. technology and ability to engage in cooperative research.[387] Finally, the new controls include limited exceptions, so as not to disrupt ongoing R&D efforts across borders or with foreign persons engaged in QIS research in the United States, and annual reporting requirements to provide greater visibility into the types of such activities.[388]

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*According to the South China Morning Post, China launched Mozi, or Micius, the world's first quantum communications satellite, in 2016. A team of Russian scientists began working with the Mozi team in 2020 to help them set up systems to begin conducting experiments with the satellite, according to Alexey Fedorov, one of the paper's coauthors. Speaking on the results of the experiment, the Russian scientists said the results help account for the imperfections of QKD protocols, such as the problem of detector efficient mismatch, which they say are "important in the context of their practical security." The Russian scientists who wrote the paper are affiliated with six different Moscow-based institutions, including the Russian Quantum Center, Moscow Institute of Physics and Technology, QSpace Technologies, HSE University, National University of Science and Technology MISIS, and the Steklov Mathematical Institute of the Russian Academy of Sciences. In the acknowledgements section of the paper, the Russian authors thanked "our colleagues from the University of Science and Technology of China" for their assistance and recommendations during the joint experiment. Victoria Bela, "China and Russia Test 'Hack-Proof' Quantum Communication Link for Brics Countries," *South China Morning Post*, December 30, 2023; Aleksandr V. Khmelev et al., "Eurasian-Scale Experimental Satellite-Based Quantum Key Distribution with Detector Efficiency Mismatch Analysis," *Optics Express* 32:7 (March 2023): 1, 8.

†The United States did impose a broader technology-based ban relating to quantum computing against Russia and Belarus in September 2022. U.S. Department of Commerce Bureau of Industry and Security, "Implementation of Additional Sanctions against Russia and Belarus under the Export Administration Regulations (EAR) and Refinements to Existing Controls," *Federal Register* 87:179 (September 16, 2022).

*The Global Quantum Supply Chain and Relevant U.S. Export Controls**

The nature of the QIS supply chains have made a U.S. policy response more challenging than the more concentrated semiconductor supply chain.[389] Additionally, some argue that the early stage of the technology and the uncertainty surrounding which QIS applications will be national security-sensitive necessitate a nuanced approach to export controls to ensure they do not interfere with the research and collaboration needed to develop the technology.[390] Dr. Parker argues that export controls should primarily be applied to systems with operational military capabilities instead of more broadly.[391] Under a capability-focused approach, U.S. export controls would only target specific quantum technology when it becomes capable of delivering qualitatively new capabilities like decryption.[392] To illustrate this approach, in his February 2024 testimony to the Commission, Dr. Parker provided the example of "quantum sensors" as a category, where at that point there were no general export controls on the technology as a whole, but instead there were export controls applicable to certain highly sensitive sensors (e.g., high-sensitivity magnetometers, gravimeters, and superconducting electromagnetic sensors) that would cover certain quantum sensors if they are successfully developed.[393] Such an approach is different than the broad-based approach currently taken for advanced semiconductors, which seek to deny China's access to a key foundational technology for AI given the inherent risks, rather than just limiting access to specific military applications.

A more broad-based approach to export controls for QIS could be more complicated than the similar approach used for advanced semiconductors and semiconductor manufacturing equipment given that the QIS supply chain is more varied. As Dr. Parker notes, "there are currently a wide variety of technical approaches [to QIS] being researched in parallel, which require very different critical components."[394] A May 2024 report by Sam Howell, an associate fellow at CNAS, noted that the quantum computing sector has several different modalities under development that each require a different and evolving set of inputs with very little overlap.[395] Further, the inputs could change as the technology matures, so the quantum technology supply chain could remain in flux for the next several years or even decades.[396]

BIS has identified a number of quantum computing-related technologies for export controls. In September, 2022, BIS prohibited export of quantum computing-related technology to Russia and Belarus, including quantum computers and certain components, cryogenic refrigeration systems and components, ultra-high vacuum (UHV) equipment, high quantum efficiency photodetectors and sources, and software and technology related to each the development, production,

*Please note that the new BIS quantum controls announced in September 2024 likely overtake some of the analysis in this subsection. Due to the timing of the release of these new controls relative to finalization of this report, their length (31 *Federal Register* pages), and the complexity of both the Export Control Classification Number system and QIS-related technology supply chains, a full analysis of the policy implications of those controls is beyond the scope of this report. U.S. Department of Commerce, *Department of Commerce Implements Controls on Quantum Computing and Other Advanced Technologies alongside International Partners*, September 5, 2024, 3.

or use of the foregoing.*[397] In its September 2024 QIS-focused controls, BIS took a broader approach, imposing controls on a variety of new Export Control Classification Number (ECCN) product categories and amending the scope of other existing ECCNs.†[398] The BIS quantum controls cover extremely powerful cooling systems, which are needed to reduce heat that causes errors in qubits that serve as the building blocks of quantum computers.[399] Although the United States produces some of its own quantum cryogenic products, it is allied or partner countries—not China—that largely make up the remainder of the supply chain for the refrigeration technologies needed in quantum devices.[400] A September 2022 report by Sandia National Laboratories notes that aside from two U.S.-based manufacturers of the technology, there are manufacturers in Canada, France, Finland, the Netherlands, and the UK.[401]

Other potential key "chokepoint" components have been more difficult to identify.‡ A 2022 Hyperion Research survey of 47 respondents across the U.S. quantum computing supply base listed various materials and products that respondents identified as the most likely potential causes of quantum computing supply chain disruption in the coming years: helium-3 gas, silicon-28, copper, aluminum, gold, high-performance cryocoolers, pumps, valves, compressors, power supplies, RF generators, superconducting wiring assemblies, dilution fridge components, fiber and coaxial cables, low-noise lasers at relevant atomic wavelengths, and key manufacturing equipment useful for quantum and classical chip manufacturing and testing.[402] Some of those materials and components are likely to have multiple sources of availability outside of the United States and allied countries. The September 2024 BIS quantum controls do apply to certain QIS-related components.[403] It is beyond the scope of this chapter to further analyze these supply chains.

Biotechnology: State-Backed Firms Build Global Imprint

Biotechnology is an emerging field with wide-ranging commercial and military applications and the potential to revolutionize various key sectors of the economy.[404] A deeper understanding of natural systems, biochemistry, and genetics paired with increasingly powerful tools for manipulating cell structures has resulted in improved medicines and therapeutics, increased crop yields, new biofuels and bioenergetics, inorganic substances, and advancements in material science and manufacturing processes.[405] The application of AI

*At the same time as the noted BIS action relating to QIS and Russia, U.S. Department of the Treasury, Office of Foreign Assets Control imposed sanctions that prohibited "U.S. persons" located anywhere in the world from exportation, reexportation, sale, or supply, directly or indirectly, of quantum computing services to any person located in Russia. U.S. Department of the Treasury, Office of Foreign Assets Control, Determination Pursuant to Section 1(a)(ii) of Executive Order 14071: Prohibitions Related to Certain Quantum Computing Services, September 15, 2022.

†The various ECCNs applicable to quantum include certain cryogenic CMOS integrated circuits, certain cryogenic cooling systems and components, certain cryogenic wafer probing equipment, certain silicon, silicon oxides, germanium or germanium oxides, certain quantum computers, quantum computing-related electronic assemblies and components, and related software. U.S. Department of Commerce Bureau of Industry and Security, "Commerce Control List Additions and Revisions; Implementation of Controls on Advanced Technologies Consistent with Controls Implemented," *Federal Register* 89:173 (September 6, 2024).

‡Dr. Parker et al. note in a 2022 publication that pieces of the quantum supply chain sourced from China are generally low-cost, off-the-shelf products like electronics and optics as well as some raw materials such as nonlinear crystals. Edward Parker et al., "An Assessment of the U.S. and Chinese Industrial Bases in Quantum Technology," *RAND Corporation*, February 2, 2022, 53, 150.

in biotechnology holds potential to be an accelerant on the pace of discovery, for example by rapidly filling in gaps in researchers' understanding of gene sequences.[406] Though the full extent to which fast-advancing subfields like synthetic biology and gene editing will reshape the realm of possibilities using living organisms is not yet clear, former Google CEO and Chairman and current Commissioner on the National Security Commission on Emerging Biotechnology Eric Schmidt said in April 2024 that we may be approaching a "ChatGPT" moment for biotechnology, one as ground-shifting as the breakthrough in generative AI in November 2022.[407] The importance of the technology has not been lost on China. A Chinese Academy of Science official typified the strategic emphasis China placed on biotechnology by stating, "As Europe won in the 19th century using industry, and the United States won in the 20th century using information technology, so China will win in the 21st using biology."[408] This section will examine the state of U.S.-China biotechnology competition, China's biotechnology ambitions, cases of concern, and the potential risks for the United States.

China Rises up the Value Chain in Biopharma despite Lagging in Fundamental Research

The CCP's leadership has long viewed biotechnology—and in particular biopharmaceuticals—as a critical technology, and it has sought to become a leader in this field with massive state support for the sector.[409] Starting with the 12th Five-Year Plan (2011–2015), the Chinese government shifted its strategy in the sector from one focused on growing copycat manufacturing capabilities toward one incentivizing innovation not just on pharmaceuticals but also across agriculture and biomanufacturing.[410] The "Made in China 2025" plan, a high-level Chinese policy document released in 2015, identified "biomedicine and high-end medical equipment" and "new materials, such as polymers" as two of the ten key sectors set for state backing.[411] The 14th Five-Year Plan for the Bioeconomy called for investments in biotechnology across a range of industries to put China "at the forefront globally" by 2035.[412] Biotechnology has been designated a strategic emerging industry by Beijing, and therefore companies enjoy a host of preferential treatments, including tax benefits, subsidies, and government procurement benefits.[413] The government has also supported development of high-tech science parks where companies can cluster and have access to state-of-the-art R&D facilities and equipment such as DNA sequencers.[414]

Though traditionally a copycat and maker of generic drugs, China has prioritized success in biopharma, investing in R&D infrastructure and supporting biotech companies that have captured key segments of the value chain for genomic sequencing and biopharma.[415] Additionally, there are signs that the Chinese biopharma sector is becoming more innovative, with metrics such as high-quality publications, patent filings, and approval of novel drugs on the rise.

China's efforts have resulted in some significant successes. With regard to biopharma, China increased its share of global value added in pharmaceuticals from 5.6 percent in 2002 to 24.2 percent in 2019, surpassing the EU.[416] China's biotechnology sector has been the recipient of sizable investment increases, with venture capital,

equity funds, and IPOs providing funding to the tune of $216 billion from 2015 to 2023.[417] Seven of the world's ten largest biopharmaceutical IPOs were by Chinese companies from 2018 to 2020, according to McKinsey & Company, while the total combined market value of China's biopharmaceutical industry grew exponentially from $3 billion in 2016 to more than $380 billion in 2021.[418]

Nevertheless, until very recently, China's biotechnology industry has struggled to deliver innovative new products, particularly in biopharmaceuticals.[419] Chinese funding has been geared more toward experimental and translational research; China is not primarily focusing on basic research, which remains an area in which the United States leads.*[420] More than a dozen biotechnology experts interviewed by *Bloomberg News* argue that the persistent lack of basic research in China has stymied domestic innovation by failing to build the knowledge foundation on which to explore novel applications.[421] Academic researchers in China struggle to collaborate with biotech firms to create high-end commercial products, and as a result, Chinese biopharmaceutical firms have produced very few truly innovative medicines.[422] Many Chinese biopharmaceutical firms continue to seek to "copycat" products developed abroad.[423] As a result, Chinese biopharma firms have lagged behind in bringing novel therapeutics to market quickly, as was the case with China's mRNA COVID-19 vaccines, which only gained approval in March 2023, two years after vaccines developed in the United States.[424]

With a robust life sciences innovation ecosystem comprising top universities, venture capital funding, and industry leading firms, the United States has long been the global leader in biopharmaceuticals and non-pharmaceutical biotechnology. U.S.-headquartered biotech firms lead in new drug development, producing twice as many new chemical or biological entities as those in Europe between 2014 and 2018.[425] U.S. firms received 62 percent of global venture capital funding in biotechnology in 2020, a figure that declined from 69 percent a decade earlier but still far exceeded China (19 percent) and Europe (15 percent).†[426] Accounting for 40 percent of the world's total, the United States still publishes nearly double the Patent

*From 2000 to 2019, 80 percent of China's R&D expenditures were focused on experimental development, using existing knowledge to improve products and processes, compared to 62 percent in the same time period for the United States. This emphasis on translational research may advantage China in developing products for defense and other critical sectors, altering human genetic structures, and some other applications. As Michelle Rozo, vice chair of the National Security Commission on Emerging Biotechnology, testified before the Commission, "A system that funds translational research is better poised to realize applications in certain biotechnology sectors, including agriculture, [industry], and defense. In a way, China is taking advantage of American basic R&D by heavily funding translational research." Michelle Rozo, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on Current and Emerging Technologies in U.S.-China Economic and National Security Competition*, February 1, 2024, 2–3.

†Funding activity for biotechnology in the United States boomed during the COVID-19 pandemic, with venture capital and IPO follow-on funding both peaking at over twice their pre-pandemic level in 2021 before falling off in 2022 and 2023. The collapse of Silicon Valley Bank in March 2023 further constrained funding, with an estimated 50 percent of U.S. biotech companies banking with the institution. There are signs in 2024 that the industry is recovering, driven by factors like investment in weight loss drugs and a shifting focus from IPOs to mergers and acquisitions (M&A) activity. Gwendolyn Wu, "Private Biotech M&A Surges amid Difficult IPO Market," *Biopharma Dive*, July 22, 2024; Chad Wessel, "The State of Emerging Biotech Companies: Investment, Deal, and Pipeline Trends," *Biotechnology Innovation Organization*, June 4, 2024; Irena Maragkou, "Biotechs Ride Obesity Drug Wave with Novel Approaches That Go beyond GLP-1Ras," *Pharmaceutical Technology*, February 15, 2024; Nicholas Megaw, "US Biotech Fundraising Boom Ends 2-Year Deal Drought," *Financial Times*, February 12, 2024; Patrick Wingrove, "SVB Fall Casts Shadow on Early-Stage U.S. Biotech," *Reuters*, March 13, 2023.

Cooperation Treaty (PCT) biotech-related patents as China.[427] U.S. biotechnology companies attracted $56.8 billion in total funding in 2023, 35 percent of the world's total in comparison to $20.6 billion to Chinese firms.[428] There are positive trends for China, however. Despite the U.S. lead in basic research, there are recent indications that Chinese biotech is becoming more innovative in cutting-edge research. In 2023, five first-in-class drugs were approved in China and three by the U.S. Food and Drug Administration, including the first FDA-approved drug to treat nasopharyngeal cancer.[429] There were 33 licensing deals in 2024 between Chinese drug makers and multinational enterprises.[430] These are deals in which multinational companies license the IP created by a smaller company and typically signal some level of innovation in the product. The number of licensing deals has more than doubled since 2019 and indicates the increasing confidence of international companies in the quality of Chinese innovations.[431] The amount of high-quality scientific publications from Chinese academics has overtaken that of the United States in certain subfields, including novel antibiotics and antivirals and biomanufacturing.[432] Chinese researchers have also made significant strides in synthetic biology, the replication of living organisms or creation of novel materials, therapeutics, or organisms.[433] The Australian Strategic Policy Institute (ASPI) ranks Chinese research in synthetic biology ahead of the United States in terms of both the volume and quality of research published.[434]

Additionally, Chinese biotech companies have become industry leaders in genomic sequencing, mass production of precursors, and intermediary services needed by innovative pharma and biotech companies, capturing larger segments of the value chain as contract research organizations (CROs), contract manufacturing organizations (CMOs), and contract development and manufacturing organizations (CDMOs).[435] A survey from Biotechnology Innovation Organization, a trade association, found that of 124 U.S. biotech companies that responded, 79 percent had at least one contract or product agreement with firms based in China or owned by China for services such as gene sequencing, data management, and conducting clinical trials.[436]

Chinese Firms Become Major Players in Genomics

China has significant capabilities in genomics. Genomics is the study of an entire organism's genetic sequence, including that of humans.[437] The Chinese government has a longstanding interest in the development of genomics, funding its development since the early 2000s.[438] In 2023, the National Natural Science Foundation under the State Council named Chinese research in genomics as one of the "ten major advancements in Chinese science."[439]

The ability to analyze vast quantities of genomic data has been likened to the holy grail of drug discovery, while giving distinct advantages in healthcare for diagnosing medical conditions and in determining predispositions for disease.[440] Yet, genomics and synthetic biology can also be used for malevolent purposes, such as surveillance using bioindicators and to make more virulent pathogens that may one day be capable of targeting subsections of populations based on shared genetic signatures.[441]

China has significant advantages in genomic data. China has pursued a comprehensive state-led effort to amass genetic data on humans and living organisms around the world stored in a central repository known as the China National GeneBank.[442] Given the nature of innovation in biotechnology, access to a massive amount of genetic data could accelerate the pace of discovery and development in emerging subfields like synthetic biology, providing the Chinese R&D community an advantage in the next evolution of biotechnology. The Chinese government designated genetic data as a national strategic resource in 2022, and it restricts the transfer of genetic information to parties outside of China.[443]

Chinese firms are becoming main drivers in genomics research and global leaders in providing genetic sequencing and related genomics services.[444] Principal among these is BGI Group, which was initially founded as the Beijing Genomics Institute in 1999 to serve as China's representative to the U.S.-led Human Genome Project, an international research collaboration in sequencing human DNA.[445] Over the subsequent two decades, BGI's research has expanded from mapping the human genome to groundbreaking research on mapping primate brains and sequencing blood samples to identify viruses.[446] The firm has also made strides in developing low-cost genome testing services and marketing them abroad, building a global brand as a commercial genetic sequencing firm.[447] As a global competitor in genomics, BGI has grown to become one of the world's largest genetic sequencing firms by capacity, with $973 million (RMB 7.05 billion) in revenue in 2022.[448] The company maintains offices and research laboratories across the world, including in Europe, Japan, and the United States, and has distributed testing products in at least 80 countries.[449] During the COVID-19 pandemic, BGI deployed genetic testing labs in more than 20 countries around the world capable of collecting genetic data, which has raised concerns that China is engaged in a concerted effort to amass genetic data abroad while walling off domestic data.[450] As of October 2024, BGI's market capitalization was $2.6 billion, well behind industry leader Illumina ($23.7 billion) and other peer genomics companies, yet the company has shown prowess in scaling globally and expanding market share.[451] BGI also runs China's National GeneBank, overseeing millions of genetic samples in cooperation with the National Development and Reform Commission and Ministry of Health, among other Chinese government agencies.[452] Amid this close government collaboration, BGI has benefited from favorable state-led subsidies, including a $1.5 billion ten-year loan from the state-controlled China Development Bank.[453]

Other Chinese firms are becoming leading firms in genomics, too. Beijing-based Novogene has created a dominant presence in next-generation genetic sequencing—DNA sequencing that provides higher-volume, faster, and cheaper genetic sequencing capabilities—completing 1.2 million samples as of 2021.[454] To develop its genetic sequencing capabilities, the firm has sought out research partnerships with U.S. partners, a pattern in Chinese-based biotech firms.[455] This includes the establishment of a "genome sequencing center" on the campus of University of California, Davis meant to research and refine genetic sequencing capabilities.[456] In 2022, Novogene also set

up a genome sequencing facility in San Jose, California, positioning it to offer genetic sequencing services to U.S. biotechnology firms in Silicon Valley.[457]

China's Biotech Industry Is Deeply Interconnected with U.S. Firms

Chinese companies have become integral in U.S. pharmaceutical supply chains, leading to dependencies and heightened risk of the transfer of sensitive health data of U.S. citizens.* A few Chinese companies do have significant globally competitive capabilities in genomic sequencing and biotech services for innovative companies. The virtues of an open and collaborative research environment between the United States and China have been extolled by many in the scientific community, yet national security experts have raised concerns particularly around the possible transfer of sensitive health data of U.S. citizens, which could enable China's technology advancement and create vulnerabilities for Americans.[458]

Chinese companies have been able to capture market share as providers of services such as genetic sequencing, offering intermediate services and conducting clinical trials, lowering the cost and occupying a significant space in the biopharma supply chain in the United States and globally. Despite growing evidence of collaboration with the PLA, Chinese genomics firm BGI and other major international biotech player WuXi have longstanding operations in the United States, enabling them to conduct U.S.-based R&D.[459] Since 2010, BGI has operated its BGI Americas laboratory in Cambridge, Massachusetts, and in 2013 BGI acquired U.S.-based DNA sequencing firm Complete Genomics.[460] BGI was a main supplier of COVID-19 test kits in the United States, providing 35 million COVID-19 tests to U.S. users by August 2020.†[461] Reporting from the *Washington Post* in September 2023 details how BGI collected vast amounts of genetic data from populations around the world during the pandemic by deploying its Fire-Eye labs—portable labs that analyzed genetic samples for traces of COVID-19—in over 20 countries.[462] BGI has also conducted extensive research collaborations with U.S. firms and institutions, including partnerships with the University of California and the Children's Hospital of Philadelphia on human genome sequencing.[463]

WuXi Group Raises Dependency and Security Concerns

WuXi Group encompasses a constellation of integrated CROs and CDMOs known as contract research, development, and manufacturing organizations (CRDMOs) that specialize in services related to drug development and production.[464] WuXi has expanded market presence in the United States and Europe, with WuXi Biologics and WuXi AppTech among the two largest subsidiaries.[465]

*Chinese state-sponsored hackers were believed to have played a role in a hack of healthcare records on 80 million Americans in 2015. There is no known evidence indicating that data from this attack have been used or made available within China for biomedical-related research. Michael Riley and Jordan Robertson, "Chinese State-Sponsored Hackers Suspected in Anthem Attack," *Bloomberg*, February 5, 2015.

†For more on BGI's role in supplying COVID-19 testing kits, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, "The Chinese Communist Party's Economic and Technological Ambitions," in *2021 Annual Report to Congress*, November 2021, 178–179.

WuXi Group Raises Dependency and Security Concerns—*Continued*

These firms have become integral to the U.S. pharmaceutical industry: it is estimated that WuXi has been involved in developing one-fourth of the drugs currently used in the United States.[466] For example, it has developed key ingredients for drugs used in treatments for HIV, cystic fibrosis, obesity, and cancers like some types of leukemia and lymphoma.[467] About two-thirds of WuXi AppTech's revenue ($3.6 billion) came from the U.S. market in 2023.*[468] As the firm has expanded its footprint in the United States, it has benefited from state and local subsidies, including an $11.5 million tax break to build a manufacturing plant in Massachusetts and a $19 million subsidy to build a manufacturing site in Delaware.[469]

WuXi's role in the U.S. drug development and manufacturing market raises significant concerns that a key U.S. industry has become reliant on a Chinese company with links to the PLA.†[470] Many companies that contract with Chinese-based CRDMOs like WuXi Group have expressed concerns that a disruption in these contracts would present major setbacks for drug development timelines. One survey of 105 U.S. biotechnology companies found over 90 percent would expect delays in their development pipeline if they were forced to switch from a China-based CRDMO and 64 percent saying this would constitute a "substantial slowdown."[471] Another survey—as previously mentioned—from the trade group Biotechnology Innovation Organization (BIO) yielded similar results, with 79 percent of 124 biopharma companies surveyed saying they had at least one contract with a China-based or -owned CRDMO; the survey indicated that fully unwinding these partnerships would take up to eight years.[472] This comes at a moment when the U.S. pharmaceutical industry is dealing with active drug shortages near all-time highs.[473]

WuXi's position in the drug development pipeline grants it potential access to U.S. clients' proprietary IP and know-how.[474] Furthermore, the company's recent expansion into genomics makes the collection of genetic data a core component of its services, raising concern over the potential transfer of genetic data of U.S. persons.[475]

In light of both firms' alleged ties to the Chinese military, U.S. policymakers are seeking to limit their reach into the United States

*In 2015, WuXi purchased an ownership stake in U.S. genetic sequencing firm 23andMe, which company representatives claimed in 2021 amounted to less than 1 percent. For more on Chinese firms investing in U.S. genetic sequencing firms, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, "The Chinese Communist Party's Economic and Technological Ambitions," in *2021 Annual Report to Congress*, November 2021, 178; Julian E. Barnes, "U.S. Warns of Efforts by China to Collect Genetic Data," *New York Times*, October 22, 2021.

†In June 2024, it was reported that WuXi AppTec employees were listed as co-inventors alongside scientists from the PLA General Hospital in Beijing on at least ten patents for altitude sickness drugs in recent years. This follows documented links between the company and the CCP going back years, with one in seven of WuXi AppTec's employees believed to be CCP members in 2013. Kirsty Needham and Andrew Silver, "Staff at Drugmaker under U.S. Scrutiny Worked with Chinese Military Scientists," *Reuters*, June 6, 2024; Sunny Cheung, Arran Hope, and Peter Mattis, "Red Genes: Assessing WuXi AppTec's Ties to the Party-Army-State in China," *Jamestown Foundation*, February 9, 2024

and access to U.S. genetic data.[476] In the last three years, the Commerce Department placed BGI subsidiaries on the BIS Entity List and the Pentagon has labeled BGI a Chinese military company, both moves that significantly limit BGI's ability to work with U.S. firms and to access U.S. technologies.[477] Yet limiting these firms' access to the U.S. market poses challenges given their extensive network of U.S. subsidiaries and partnerships and deep involvement in numerous pharmaceutical R&D supply chains.[478] For example, MGI Group, which sells gene sequencing equipment in the United States, avoided the first round of government sanctions on BGI despite being a subsidiary of BGI until being spun out in 2022.[479] Although the firm claims to be a "completely different company," BGI's founder and chairman Wang Jian holds 47 percent of MGI shares following MGI's public listing.[480] Members of Congress have called for MGI to be named a "Chinese military company" along with other alleged BGI subsidiaries that have avoided sanctions as of April 2024, including genetic sequencing firms Innomics and STOmics.[481]

Other Chinese biotech firms have also sought collaborations with U.S. firms and research institutions. VCanBio Cell and Engineering Corporation, which markets itself as China's largest biotechnology firm, boasts a 15,000-square-foot research center and a facility with an explicit focus on translating advancements in biological research, both near Boston.[482] Another Chinese firm, QLB Biotherapeutics, similarly oversees a biotech incubator in Boston, with QLB aiming to invest in U.S. biotech startups housed in the incubator and to acquire the rights to any therapeutics the Chinese-owned, U.S.-based incubator produces.[483]

Chinese State Support Helped Create One of the World's Largest Bio-Agriculture Companies

China has pursued its biotechnology ambitions in bio-agriculture, seeking to enhance agricultural processes to create higher yields and stronger crop resiliency, benefits that are sought after in China due to the country's longstanding concerns surrounding food insecurity.[484] As Chinese companies have become major players in an already highly concentrated global agribusiness industry, there are growing concerns about overdependency. Chinese firms have aggressively registered bio-agricultural patents and are now the global leaders in government funding of agricultural R&D, according to 2022 estimates by the U.S. Department of Agriculture's Economic Research Service.[485] China's progress in genome sequencing and analysis, which can be leveraged in the agricultural industry for genetically engineering agricultural products, is also gaining ground.[486] A 2022 study found Chinese scientists had published more papers concerning crop genomics and plant gene editing technologies in recent years than any other country.[487]

To achieve its bio-agricultural ambitions, the Party-state has staunchly backed the growth of its largest state-owned firms.[488] One such state-owned company is ChemChina, China's largest chemical company, which in 2017 purchased Swiss-based seed-producing giant Syngenta, a leading firm in bio-agriculture.[489] A major state support component was included as part of the $44 billion acquisition, with the Bank of China providing a $10 billion bond and

another worth $7 billion coming from China Reform Holdings Corp, a state-owned asset manager.[490] Recent consolidation of global agricultural companies has increased Syngenta's market share, enabling China to position itself strategically in the bio-agricultural sector.[491] According to Michelle Rozo, vice chair of the National Security Commission on Emerging Biotechnology, following ChemChina's acquisition of Syngenta, four companies now control large segments of agricultural biotechnology and other agricultural inputs: U.S.-based Corteva, German-based Bayer and BASF, and Syngenta.[492] These four firms are now responsible for the vast majority of pesticide and seed treatment research and manufacturing.[493] They also conduct most global seed research, developing genetically engineered (GE)* seeds that they themselves sell or license to other firms.†[494]

Chinese state ownership of Syngenta affords Beijing influence over global agricultural markets, disadvantaging U.S. companies. The Chinese government is both the key biotechnology regulator in China and the owner of a major bio-agriculture firm that competes with other firms it regulates, including U.S. firms.[495] Therefore, Syngenta is in a privileged position of being owned by the same entity that regulates matters vital to the firm's success.[496] This beneficial regulatory relationship with the country's largest domestic agricultural firm occurs as Chinese regulators continue to stymie foreign competitors.[497] According to Dr. Rozo, the Chinese government routinely slows licensing for U.S. firms to market GE crops in China and exploits samples of U.S.-produced GE seeds to develop domestic competitors on a reduced timeline.[498] This is a direct violation of China's WTO commitments and agreements made as part of the Phase One trade deal, where Chinese authorities agreed to efficiently review and approve U.S.-made biotechnology products.[499] According to a report from the Office of the U.S. Trade Representative (USTR), China's lagging approval process of U.S.-made biotechnology goods "remains among the most significant commitments under the Phase One agreement for which China has not demonstrated full implementation."[500] In one instance of delayed licensing, after a

*A genetically engineered organism refers to any organism that is modified using techniques to directly transfer or remove genes in that organism, as opposed to the more common yet broader category of genetically modified organism (GMO), encompassing organisms altered by GE or conventional breeding. Canadian Biotechnology Action Network, "GM/GE Definition," 2024.

†The Chinese acquisition of Syngenta, which had to be cleared by the Committee on Foreign Investment in the United States, also faced opposition by U.S. agricultural stakeholders on security grounds. Previously, Syngenta had led major research programs relevant to U.S. military interests, particularly in biofuels. As highlighted in testimony by Dr. Rozo, now that Syngenta is a Chinese SOE, it could withhold biofuel advancements from the U.S. military, a concern expressed by domestic farming unions at the time of the ChemChina acquisition deal. Furthermore, several of Syngenta's U.S. agricultural facilities are near U.S. military facilities, raising concerns by some that Syngenta's ostensibly commercial research sites could serve as covert research sites near U.S. national security activities. Following Syngenta's acquisition by ChemChina, the state of Arkansas announced investigations into Syngenta's ownership of land in the state. After finding that the company did not properly disclose its Chinese ownership, the company was ordered to sell 160 acres of land. Nova J. Daly, written testimony before the Committee on Agriculture U.S. House of Representatives, *Chinese Acquisitions of U.S. Agriculture and Land Holdings and Control of Relevant U.S. Supply Chains: Addressing National Security Risks*, March 20, 2024, 4, 7–9; Michelle Rozo, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on Current and Emerging Technologies in U.S.-China Economic and National Security Competition*, February 1, 2024, 9; Neal Earley, "State Orders a Chinese-State Owned Syngenta Seeds to Divest Ownership of Arkansas Farmland," *Arkansas Democrat Gazette*, October 18, 2023; Attorney General of Arkansas, *Attorney General Griffin Orders Divestment of Chinese-Owned Land and Imposes $280,000 Civil Penalty*, October 17, 2023; Food & Water Watch, National Farmers Union, "China National Chemical Corporation Proposed Purchase of Syngenta AG," July 21, 2016, 12–14.

decade-long wait, the Chinese government in 2023 finally approved licenses for U.S. firm Corteva to market product grown in the United States using a GE canola seed.[501] However, due to the delayed timeline, that canola variety had become outdated.[502]

Since acquiring Syngenta, the Chinese government continues to assert its position in the global bio-agriculture sector. In 2020, the State Council's State-Owned Assets Supervision and Administration Commission began combining agricultural assets of ChemChina and other firms under the Syngenta name.[503] The resulting Chinese state-owned Syngenta is now the world's largest seed and agrochemicals conglomerate, with $27 billion of annual sales and major markets across Europe, North America, Latin America, and Africa.[504] Since 2021, Syngenta has also reportedly been planning a Shanghai IPO worth as much as $10 billion, which could provide the firm with RMB liquidity to facilitate Chinese government-directed acquisitions of emergent bio-agricultural companies.*[505] If the Syngenta case is illustrative, there may be further consolidation of international bio-agricultural firms under direct Chinese state ownership.[506]

AI May Enhance China's Biotech Ambitions

Chinese breakthroughs in biotech for both commercial and military sectors can be propelled by AI and advances in machine learning, according to Dr. Rozo's testimony before the Commission.[507] AI and machine learning can be applied to assist in analyzing genetic codes, conducting image analysis for agriculture and medical diagnostics, and running autonomous experimentation to accelerate the speed of cutting-edge technological development.[508] Dr. Rozo testified that nearly every area of biology has advanced through the use of AI/machine learning tools and will continue to do so as the data and models improve.[509] Chinese firms already claim to be benefiting from this AI-biotech nexus.[510] Insilico Medicine, with headquarters in Hong Kong, claims to have used AI in pharmaceutical development to reduce a multiyear discovery process down to 18 months and at a fraction of the cost.[511] BioMap, a biotech firm with headquarters in Beijing, claims to have developed an AI Foundation Model with over 100 billion parameters to speed drug discovery.[512]

A key aspect of the AI-biotech nexus is quality data. According to the U.S. National Counterintelligence and Security Center, China "has enacted national policies prioritizing the collection of healthcare data both at home and abroad to achieve its goal of becoming a global biotech leader" and has collected large datasets from the United States and other countries.[513] Dr. Rozo argues that thanks to government support, China's biotech ecosystem may be better suited than the United States to utilize AI and other emerging technologies to advance biotech research, particularly given its National Genome Sequencing Data Center and BGI's significant role in providing genomic sequencing ser-

*As of March 2024, that IPO is currently withdrawn at the direction of Chinese authorities due to weakness in Chinese equity markets. *Reuters*, "Exclusive: Beijing Nudged Syngenta to Withdraw $9 billion Shanghai IPO on Market Weakness," April 3, 2023.

AI May Enhance China's Biotech Ambitions—*Continued*

vices.[514] Similarly, WuXi Apptec's role in numerous biotech supply chains provides WuXi access to a wide variety of otherwise proprietary data. "It appears that the Chinese system is better oriented towards convergent [AI-enhanced biotech] research," Dr. Rozo testified, and "the Chinese government has been prioritizing this intersection at a national level for years, while the U.S. Government has yet to do so at the same scale."[515]

Batteries: China's State Support Powers Growing Market Dominance

From powering EVs to supporting the U.S. power grid, battery technology plays an increasingly crucial role in the U.S. economy and military readiness.[516] The U.S. battery market, already estimated at $16.9 billion in 2023, is expected to more than double by 2030 with the transition to battery-powered vehicles and the installation of more batteries in energy systems.[517] In contrast to the other technologies examined in this chapter where the United States and China are competing to gain a clear advantage, China currently dominates nearly all stages of battery production.[518] Six out of the world's top ten battery producers are based in China, accounting for 77 percent of global production capacity* as of 2022, compared to just 6 percent for the United States.[519] This advantage is set to continue, with energy data firm BloombergNEF projecting that by 2025 and beyond, China will maintain at least three times as much battery production capacity as the rest of the world combined.[520] With China's leading role in battery production, the United States has become increasingly dependent on China for finished batteries as well as battery technology, components, and materials.[521] Despite recent attempts to reduce U.S. reliance on Chinese batteries, China remains the leading battery exporter to the United States, accounting for over 70 percent of lithium-ion batteries imported in 2023 by price and over 50 percent of all electric storage batteries, including separators and parts.[522]

China's Dominance in the Battery Supply Chain

China has attained a sizable advantage at each stage of the battery supply chain, from upstream mining of raw materials, to midstream processing and fabrication of components, and finally to downstream assembly and production of finished batteries.[523] In its 14th Five-Year Plan for Raw Material Industry Development, China describes raw materials as the "foundation of the real economy" and a "main battlefield for industrial green development."[524] China's success in battery manufacturing stems in large part from its leading position in producing and processing critical minerals.†[525] As

*Production capacity refers to the maximum potential manufacturing capacity a country can produce of a given good; for batteries, it is measured in gigawatt hours (GWh).

†Critical minerals currently include 50 minerals and elements considered essential to the economic or national security of the United States. They are vulnerable to supply chain disruptions and are used in manufacturing of a product that, if curtailed, would have significant consequences for U.S. interests (e.g., lithium, cobalt, graphite, gallium, germanium, nickel, tin, etc.). U.S. Department of the Interior, U.S. Geological Survey, *What Is A Critical Mineral?*

of January 2024, China is responsible for 60 percent of the world's rare earths mining production, a subset of critical minerals crucial not only for battery production but also for defense technologies, including missiles, lasers, and tanks.[526]

Chinese firms have augmented their significant domestic processing and refining of rare earths by securing mining agreements with resource-rich countries to secure supply of the critical minerals used in batteries.[527] Nickel, lithium, and cobalt are vital inputs for battery manufacturing for which China lacks substantial domestic resources.[528] In 2022, China signed a $14 billion deal to mine nickel in Indonesia and a $422 million deal for lithium mining in Zimbabwe, complementing existing agreements in the Democratic Republic of the Congo, where Chinese firms own 80 percent of cobalt mining.[529] Chinese firms continue to expand control of the global critical mineral mining industry. According to GlobalData, the number of planned critical mineral mines either under development or set for exploration by Chinese companies outside of China is set to more than double to 89, up from the 40 currently in operation.[530] Many of these planned mines are set to operate in developing Belt and Road Initiative member countries in Africa and Southeast Asia, where Chinese investment in metals and mining is reaching record highs.[531]

In line with government directives for rare earth and raw material enterprises to consolidate and extend their industrial chains further downstream, China has also invested heavily in refining capabilities, constructing factories domestically and abroad to bolster and enhance its ability to process the materials needed to produce batteries.[532] China now processes and refines 90 percent of the world's rare earths and a significant portion of other critical minerals needed for lithium-ion batteries, including 95 percent of manganese, 70 percent of cobalt and graphite, 66 percent of lithium, and over 60 percent of nickel.[533] This includes a Chinese-owned $300 million lithium processing plant in Zimbabwe that reportedly has the capacity to process 4.5 million metric tons of hard rock lithium annually for export; Zimbabwe has one of the largest concentrations of lithium reserves in Africa.[534] According to Rodrigo Castillo and Caitlin Purdy at the Brookings Institution, China's state-owned investment bank CITIC also boosts China's refining capabilities by channeling government funds to support Chinese firms, including Chengdu-based Tianqi's overseas lithium refining operations.[535] At the same time China is investing in refining capabilities, efforts to upgrade resource-refining capabilities in the United States and Europe are facing pushback due to health and environmental concerns.[536]

Downstream, China is further solidifying its lead in battery manufacturing. China has invested heavily in manufacturing battery components and with subsidies for battery manufacturing companies for years.[537] The Chinese government has designated the battery and EV industry as an industry of strategic importance since at least 2010, when it was specifically identified as a matter of priority by the State Council.[538] Support for the development of the "new energy vehicle" industry was included in the 12th Five-Year Plan (2011–2015), in the Energy-Saving and New Energy Vehicle Indus-

try Development Plan (2012–2020), and as one of the ten industrial priorities in Made in China 2025.[539] The most recent 14th Five-Year Plan (2021–2025) names new energy vehicles as a strategic emerging industry, and a New Energy Vehicle Industry Development Plan (2021–2035) outlines advancement objectives in efficiency, global market share, and integration of autonomous driving systems.[540] A 2024 report from the Center for Strategic and International Studies estimates that between 2009 and 2023, Chinese government support for the EV and battery industry totaled at least $230.9 billion, equivalent to 18.8 percent of total EV sales of Chinese car companies.[541] The subsidization has continued, even as China dominates global battery production. Notably, Fujian-based Contemporary Amperex Technology Co., Ltd. (CATL) received $391 million (RMB 2.85 billion) in government support over the first six months of 2023.[542] This constituted a nearly threefold increase in government subsidies year-over-year for a company that comprises 36.8 percent of global market share of batteries for EVs.[543]

Buoyed by strong government backing, as of 2023, Chinese firms produced 77 percent of all battery cathodes produced globally, 74 percent of separators, 82 percent of electrolytes, and 92 percent of anodes at a fraction of the cost compared to U.S. competitors.*[544] This environment has also allowed Chinese battery makers to develop batteries key to powering future cutting-edge products.[545] For example, a new condensed battery produced by CATL claims to maintain an energy density of up to 500 watt-hours per kilogram (Wh/kg).[546] This is an energy density above the projected requirements needed to power a future fully electrified airplane.[547] Meanwhile, Chinese breakthroughs in solid-state batteries are set to broaden the efficiency and duration with which Chinese automotive manufacturers can power the newest generation of EVs.[548] With such an extensive array of subsidies and existing market dominance of nearly all battery components, Chinese firms are poised to continue dominating global battery markets, including in the United States.[549]

China's Dominance in EVs

As automotive firms increasingly focus on the production of EVs, China's car manufacturers are well positioned. The global EV market, which already grew from $384.65 billion in 2022 to $500.48 billion in 2023, is projected by Fortune Business Insights to more than triple by 2030, with significant growth in the Asia Pacific.[550] About 60 percent of total EV batteries sold globally in 2022 were made in China.[551] This creates dependencies on Chinese-produced EV batteries for U.S. automakers, while Chinese EV manufacturers work to vertically integrate domestic battery production into their supply chains in order to solidify first mover advantages and ascend the ranks of global auto manufacturers.[552]

According to the Center for Strategic and International Studies, China's investment in EV batteries has been backed by about

*Most batteries comprise the same basic components, including positively charged cathodes, negatively charged anodes, electrolytes made up of lithium salts needed for conductivity, and a porous separator to prevent the positive and negative sides from touching. Agnes Chang and Keith Bradsher, "Can the World Make an Electric Car Battery without China?" *New York Times*, May 16, 2023; Shawn Hymel, "What Is a Battery?" *Sparkfun*.

China's Dominance in EVs—*Continued*

$130 billion in government-led research incentives, government contracts, and consumer subsidies.[553] While Chinese battery subsidies consistently cost the Chinese government billions of dollars a year, they combine with relatively low labor costs and significant manufacturing expertise to allow Chinese firms to produce battery packs for EVs at a cost of $127 per kilowatt hour compared to their North American and European competitors, whose costs are 24 percent and 33 percent higher, respectively.[554] Chinese EV battery factories can also be constructed at a price more than $200 million less than a potential counterpart in Europe.[555]

While some countries are seeking to diversify away from Chinese batteries, this is costly in the near term. BloombergNEF estimates that the EU and the United States would need to spend $98 billion and $82 billion each in initial manufacturing construction alone to meet domestic battery demand in order to cut their market reliance on China.[556] The EU further estimates it will need to spend an additional $412 billion (€382 billion) across the entire battery supply chain to eliminate its reliance on Chinese battery imports and achieve self-sufficiency by 2030.[557] As a result of China's dominant position in EV battery making, most global EV makers are set to continue to depend on China—at least in the short term—including Tesla, which relies on China for 40 percent of its battery supply chain.[558]

Major Chinese EV manufacturers, like BYD, have capitalized on China's battery manufacturing advantages.[559] Unlike U.S. competitors, BYD controls nearly all aspects of its battery supply chain.[560] The firm, which was founded as a battery manufacturing business, owns over 20 battery-making plants in China, including one of the world's largest battery-making plants with a 24-gigawatt-hour (GWh) capacity in Qinghai Province.[561] BYD's stakes in resource mining allow the firm to lock in discounts in sourcing raw materials to make batteries.[562] Like other Chinese firms, BYD has benefited from strong government support, with direct subsidies of over $3.7 billion between 2018 and 2022, according to the Kiel Institute.[563] Amid this generous state support, BYD has plans to open more battery factories and consolidate much of its upstream battery-manufacturing sourcing, including gaining ownership stakes in lithium mining operations, exploring joint ventures in nickel mining, and developing sodium-ion batteries.[564]

Chinese firms are now poised to dominate global sales of EVs. One estimate finds that Chinese EVs are set to account for one-third of global market share by the end of this decade, increasing market share outside of China from 3 percent in 2024 to 13 percent in 2030.[565] BYD has become a major player in the global EV market, dominating domestic and foreign firms in China's EV market while surpassing Tesla in global sales of battery EVs in the last quarter of 2023, thanks to Chinese government support and strong domestic supply chains.[566] Other Chinese EV firms already operating at home in what is the world's largest automotive market have established beachheads abroad and are surging in

China's Dominance in EVs—*Continued*

international EV markets. Hangzhou-based Geely Auto reported a 48 percent year-on-year increase in 2023 EV sales, with more than 270,000 Geely EVs sold outside of China.[567] State-owned SAIC reported an 18.8 percent increase in its 2023 overseas EV sales year-over-year and has unveiled plans to begin promoting 14 new EV models for foreign markets by 2025.[568]

Many countries will gladly accept China's low-cost EVs, indicating that China's market share is likely to increase and ultimately displace existing suppliers in those markets, a development likely to cut into the revenue of U.S. automakers from sales overseas. Some countries have resisted them over concerns that China's massive subsidies for the sector have created unfair competition. The United States and Canada in 2024 both announced a 100 percent tariff on EVs imported from China, and the EU imposed tariffs ranging from 17 to 38 percent on top of the existing 10 percent tariff on all imported cars.[569] Brazil, which became the largest import market for Chinese EVs in 2024, is in the process of gradually increasing tariffs on imported vehicles from zero to 35 percent by 2026 in order to protect domestic industry.[570]

Batteries as Key Components of Global Electrical Grids

Chinese batteries also play a crucial role in providing electrical storage equipment for power grids worldwide, including in the United States. China is increasingly supporting and subsidizing what it calls "new-type energy storage systems" (NTESS), energy systems that use novel technologies to store and distribute power, such as battery energy storage systems (BESS), compressed air energy storage, and flywheel systems, among others.[571] As of 2023, China's installed NTESS capacity stood at 13.1 gigawatts (GW), with lithium-ion batteries utilized in these systems accounting for 28.7 percent of the world's total deployed power capacity for lithium-ion batteries.[572] These energy storage systems are central to China's five-year plans at both the national and provincial level, with targets to reach 100 GW in cumulative battery storage capacity by 2030.[573] In contrast, the United States had a total energy storage system capacity of 17 GW by the end of 2023.[574] With China the global leader in energy storage systems, the United States imported a record 841,573 metric tons of lithium-ion batteries in 2023, mostly from China.[575] This constituted a 32.9 percent rise from 2022 and marked the third straight year U.S. battery imports have risen by over 30 percent.[576]

Utility-scale batteries are increasingly necessary to support U.S. energy storage stations, especially as they integrate more power generated by alternative energy like wind and solar.[577] Leading China's entrance into U.S. battery energy storage systems is Fujian-based battery firm CATL, whose battery-backed energy storage systems are being rapidly installed into the U.S. electric grid.[578] According to Craig Singleton, China program director and senior fellow at the Foundation for Defense of Democracies, several CATL-supported BESS projects are under construction or have already been complet-

ed in the United States, including a March 2022 CATL battery-supported BESS project in Florida and an August 2022 project near Richmond, Virginia.[579] Nevada-based firm Primergy Solar entered into a sole battery supply agreement with CATL in October 2022, which is set to be among the largest solar and storage projects in the United States.[580]

CATL's rapid expansion in the U.S. electrical storage market comes at a time when energy storage batteries are increasingly key to the U.S. grid's function.[581] In the second quarter of 2024, energy companies connected nearly 4 GW* of battery storage to the United States grid, up 87.3 percent year-on-year and bringing total capacity to 23.8 GW.[582] CATL batteries are well positioned to underpin Texas's power grid, where battery storage makes up nearly 60 percent of new energy projects seeking to connect to the grid, far more than any other energy storage source.[583] This battery dependency in energy grids is only expected to grow. Texas currently has 4 GW of energy battery storage for its grid; this will rise each of the next two summers to reach a total of 12–14 GW.[584] CATL has major contracts in Texas, including an agreement with Texas-based HGP Storage to produce up to 5 GWh† of energy to support the Texas power grid.[585]

Mr. Singleton argues that the integration of CATL batteries into the U.S. electrical grid creates potential vulnerabilities to hacking, intelligence gathering, and disruption from China.[586] Due to vulnerabilities in EV charging networks, EVs themselves, and BESS-related systems, hardware manufacturers could compromise EVs, charging networks, electric grids, and industrial control systems.[587] Mr. Singleton acknowledges that "it is challenging to ascertain the precise likelihood of such attacks, [but] the potential exists."[588] Another report from Aon, a cybersecurity advisory firm, similarly identifies vulnerabilities in BESS systems, finding that their operating systems and components can be out of date and lacking in sophisticated security measures.[589] Should these vulnerabilities be exploited, they could be deeply disruptive to the energy systems in which they are embedded.[590] In his report, Mr. Singleton indicates that previous cyberattacks have already targeted energy systems, such as a 2022 ransomware attack on India's Tata Power, one of the country's largest integrated power companies.[591] He warns that in the worst-case scenarios, such attacks could carry grave consequences, including potential blackouts of critical industrial areas and major financial hubs.[592] The Aon report further identifies risks of lithium-ion batteries themselves that underpin BESS systems. These batteries require careful oversight and control for their voltage and temperature.[593] Should a threat actor interfere, these battery cells could rapidly degrade or, in the case of extreme interference, a remote attack could trigger a significant fire or explosion at the site of the BESS system with potentially broader consequences for the local grid, a point echoed by Dr. Jeffrey Nadaner, former Deputy

*One GW is equivalent to 1,000 megawatts and represents roughly the same energy output of two coal-fired powerplants, enough to power 750,000 homes in the United States. Mary Pressler, "The US Installs 15.1 Gigawatts of Generation So Far in 2022," *Quick Electricity*, September 1, 2022; Dana Hull, "California Hits Renewable Energy Milestone: 1 Gigawatt of Solar Power Installed to Date," *Mercury News*, November 8, 2011.

†A gigawatt hour (GWh) is a flow measurement of electrical output over one hour. 1 GW of installed capacity produces 1 GWh of electricity in an hour, 168 GWh in a week, and 8,760 GWh over one year.

Assistant Secretary of Defense for Industrial Policy, in testimony before the Commission.*[594]

These battery storage systems are complemented by other Chinese equipment also being installed in the U.S. power grid. As Joe Weiss describes in *Control*, from 2006 through 2023, the United States has imported around 450 transformers over 10,000 kilo-volt-amperes (kVA) from China.[595] More than 360 of these Chinese-made transformers were large transmission systems over 100,000 kVA that are key to operating the electrical grid.[596] Mr. Weiss warns that despite some executive action† to limit foreign influence in the electrical grid, U.S. utility firms continue to buy Chinese equipment, including more than 125 large Chinese transformers since 2020.[597] Chinese energy storage batteries and related equipment are increasingly installed in U.S. power networks.

Batteries Linger in U.S. Networks

Despite efforts to remove Chinese batteries from some U.S. critical networks, such as the U.S. military's ban on buying Chinese batteries, Chinese-produced batteries remain critical parts of the supply chain for the U.S. government.[598] According to Dr. Nadaner's testimony before the Commission, between 2018 and 2023, 1,503 battery suppliers to U.S. government agencies relied on Chinese components in their supply chain, more than double Japan (462) and Germany (392), the second and third leading component suppliers.[599] Last year, Chinese-produced industrial batteries were unplugged at Camp Lejeune due to congressional concerns of the potential risks these batteries posed to disrupting the military installation's power supply and energy infrastructure.[600] Experts claim that a BESS system such as the one installed at Camp Lejeune requires frequent remote operation and that telecommunications equipment connected to the batteries could be vulnerable to hacking attempts.[601] Preceding the batteries' removal, 27 lawmakers signed a letter warning that "CATL could introduce malware into large-scale power storage stations, threatening the U.S. energy grid" and that the presence of CATL batteries in U.S. military installations and critical infrastructure "raise[s] several concerns that a malicious actor, or government, could seek to exploit."[602] Mike Casey, director of the National Counterintelligence and Security Center, further warns against the risks introduced by Chinese battery storage systems: "We encourage power companies interested in using these industrial battery energy storage systems from China to think beyond the short-term cost savings they may realize and consider the potential long-term vulnerabilities and how to mitigate them."[603]

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*The simultaneous detonation of Hezbollah devices in Lebanon in September 2024 demonstrated the feasibility of prepositioning in a network and carrying out a coordinated remote sabotage strike. Though the context in which this attack occurred and the tactical approach are unique, the event underscores the imperative to ensure remote backdoor capabilities are not built into battery systems in U.S. networks, given these systems' inherent explosive quality. Bruce Schneier, "Israel's Pager Attacks Have Changed the World," *New York Times*, September 22, 2024; Craig Singleton, "Beijing's Power Play," *Foundation for Defense of Democracies*, October 23, 2023.

†Executive Order 13920, signed May 1, 2020, by the Trump Administration, directed the U.S. Department of Energy to lead interagency efforts to ensure purchases of bulk power systems used in the U.S. electrical grid from entities controlled by a foreign adversary did not pose unacceptable national security risk. The executive order has since been suspended by the Biden Administration. Joe Weiss, "The U.S. Electric Industry Is Not Responding to Cyber-Vulnerable Chinese Equipment," *Control*, February 29, 2024; Executive Office of the U.S. President, "Securing the United States Bulk-Power System," *Federal Register* 85:26595 (May 4, 2020).

U.S. Efforts to Restrict Chinese EVs

With greater U.S. investments to transition from carbon-based energy sources, the Biden Administration is moving to prevent U.S. firms from opting for widely available Chinese-made energy technology, particularly in the transportation sector. In December 2023, the Administration explicitly restricted Chinese EV suppliers from receiving tax credits and incentives from the Inflation Reduction Act by designating them as a Foreign Entity of Concern (FEOC).*[604] The raft of tariff increases the Administration announced in May 2024 brings the rate on Chinese EVs under Section 301 up from 25 percent to 100 percent and on Chinese batteries from 7.5 percent to 25 percent, citing unfair subsidies and rapid growth of Chinese exports as threatening to U.S. producers.[605]

Despite growing scrutiny, U.S. firms have maintained partnerships with Chinese battery producers. For example, Ford announced in February 2023 that it would start producing low-cost lithium-ion batteries by 2026 at its plant in Michigan using technology licensed from CATL.[606] This illustrates one of the main challenges for U.S. industries seeking to reduce reliance on Chinese batteries. Even if the United States reduces dependencies on physical Chinese batteries, China continues to dominate battery supply chains and even research in battery technology, publishing about half of the world's research on battery efficiency.[607] As a result, Chinese firms often maintain an edge over U.S. competitors in technology, IP, and know-how in battery manufacturing.[608] Ford is therefore in an unenviable position of licensing state-of-the art CATL technology and IP, even as the Administration seeks to limit the reach of Chinese battery makers in the United States.[609] The planned partnership appears set to proceed amid bipartisan congressional concerns and the Administration's new rules, which do not directly prohibit the Ford-CATL agreement.[610]

Internet of Things (IoT) Raises Growing Concern

There is rising concern of potential security threats to U.S. networks associated with Chinese-made devices.[611] In recent years, the Federal Communications Commission (FCC) has placed ten Chinese companies—including Huawei, ZTE, and Hangzhou Hikvision Digital Technology—on its Covered List that prevents the marketing, sale, or operation of any equipment within the United States due to national security risks.[612] Recent attention has focused on cellular modules produced by Chinese companies, which connect IoT† devices to the internet that have the potential to be remotely accessed and controlled from China.[613] Chi-

*Under the rules set to be implemented over 2024, companies will be denied tax credits if vehicle batteries contain components that were manufactured or assembled by an FEOC. Beginning in 2025, the rules expand in scope to disqualify any vehicles whose batteries contain any critical minerals extracted, processed, or recycled by an FEOC. U.S. Department of the Treasury, *Treasury Releases Proposed Guidance to Continue U.S. Manufacturing Boom in Batteries and Clean Vehicles, Strengthen Energy Security*, December 1, 2023.

†An IoT device could connect any electronic device to the internet, such as vehicles and home appliances. David Shepardson, "US FCC Chair Says China's Quectel, Fibocom May Pose National Security Risks," *Reuters*, September 6, 2023; U.S. House of Representatives Select Committee on the Strategic Competition between the United States and the Chinese Communist Party, *Letter to FCC Chair on Chinese Internet Connectivity Modules*, August 8, 2023.

Internet of Things (IoT) Raises Growing Concern—*Continued*

na's government has sustained policies to boost IoT development, including accelerating IoT research and applications in the State Council's "Made in China 2025" plan released in 2015.[614] China is one of the largest producers of IoT equipment globally, with three Chinese companies, Quectel (37.1 percent), Fibocom (6.9 percent), and China Mobile (6.8 percent), collectively holding about half of the global market as of the first quarter in 2024.[615] In September 2023, the FCC reportedly raised security concerns about two Chinese IoT module companies, Fibocom and Quectel, to U.S. government agencies with the relevant authority to consider whether they pose national security risks.*[616]

The United States is separately considering measures to address potential privacy, data security, and cyber security concerns associated with Chinese-made EVs. Similar to the concerns raised by Mr. Singleton, independent cybersecurity researchers have demonstrated the ability of Chinese-made EVs and EV charging equipment to collect and transmit data back to China and install malware.[617] In February 2024, the Commerce Department issued an Advanced Notice of Proposed Rulemaking to address threats stemming from "connected vehicles" from China.[618] On September 23, 2024, BIS released a Notice of Proposed Rulemaking to address security concerns from connected vehicles that, if finalized, will prohibit the sale or import of certain types of Chinese hardware and software integrated into vehicle connectivity systems and automated driving systems to take effect for model years 2027 and 2030, dependent on the type of technology.[619]

Implications for the United States

U.S.-China technology competition is foundational to both U.S.-China economic competition and national security. China has realized the importance of technology supremacy for decades and consistently implemented policies designed to gain an edge in technologies of the future. If China surpasses the United States in the development and deployment of these technologies at scale, industries critical for the United States and its allies could become overly reliant on China, and the balance of regional and global power could shift in the PLA's favor. The United States has already begun to take aggressive steps to ensure continued U.S. technological leadership in these sectors through domestic investments, export controls, and investment restrictions, and it is considering other policies, but some hurdles remain.

Advanced computing technology, including AI, is at the forefront of U.S.-China technology competition. AI will add tremendous value to the global economy and reshape a swath of industries. AI also has

*Quectel refuted concerns raised regarding the security of its modules. In a press release, Quectel Wireless Solutions stated that "Quectel customers own the data, and [Quectel has] no access to any of the data collected." *Business Wire*, "Quectel Response to FCC about IoT Module Security," September 7, 2023; David Shepardson, "US FCC Chair Says China's Quectel, Fibocom May Pose National Security Risks," *Reuters*, September 6, 2023.

the potential to transform the military balance between the United States and China by helping both militaries improve their data analysis, accelerate battlefield decision-making, and more effectively target the adversary.[620] One key to AI competition is advanced semiconductors, where the United States has a lead but China is investing heavily to catch up. Separately, there is a risk that China may flood the world with cheap legacy semiconductors, forcing prices down, which may threaten the viability of other countries' legacy semiconductor industries and provide China with significant global economic leverage. Another aspect of competition in AI is the quality and performance of AI models. Amid a vigorous debate within the AI industry over whether open source or closed source models are the better approach, entities in China have been using U.S. open source models as the basis for some of their technological advances. There is not currently a U.S. policy framework that focuses on the differences between the two approaches for U.S.-China technology competition. Moreover, experts have also expressed concern over the need to address cloud computing, a key potential workaround that could allow Chinese firms or even the PLA itself to access highly advanced AI and quantum computing capabilities located in different countries and delivered remotely via the cloud.[621] While existing controls on AI have limited such access to a certain extent, technological change, developments in global markets, and evolving Chinese policy responses all underscore the importance of regularly reviewing U.S. export controls and related policies.

While practical breakthroughs from QIS are generally yet to be realized, the potentially profound economic and national security implications of such technologies require close scrutiny. The country that has the edge in quantum technologies will be able to protect its communications networks from eavesdropping and interception, break adversaries' encryption methods, bolster its scientific research, and deploy advanced sensing capabilities to detect enemy military assets.[622] To date, the U.S. export control policy response for QIS has been limited, at least in part because defense applications have been viewed as less achievable within the short to medium term for most aspects of QIS other than quantum sensing.[623] Unlike the advanced semiconductor controls used for AI, U.S. quantum technology controls primarily only target specific Chinese end users instead of the other enabling technology categories. Questions remain regarding the effectiveness of the end user approach, the utility of broader controls on enabling technologies and access to R&D and know-how, and potential opportunities for multilateral cooperation with allies.[624]

U.S.-China competition in biotechnology will have significant economic impacts in terms of capabilities in numerous technologies and manufacturing industries of the future, and for some applications it will have direct national security implications. In addition, genomic-related biotechnologies raise concerns about data collection, including access to sensitive health and genetic data on U.S. citizens and abuse for surveillance purposes. At the same time, many applications of biotechnology would provide overall benefits to healthcare, medicine, and related technologies, and traditionally, cooperative scientific research in such fields has been supported. While the

United States leads in many areas of innovation in biotechnology, Chinese biotechnology companies such as BGI and WuXi have become integral in U.S. genomic and pharmaceutical supply chains, raising concerns over dependency for medical and agricultural products. Furthermore, these companies are obtaining advantages over time due to their access to sensitive data and proprietary commercial information, an area of particular concern given their alleged ties to the PLA.

Finally, the rapid expansion and dominant position China has attained in the global battery industry presents an expansive challenge for policymakers in an emerging technology with major implications for the transition to clean and renewable energy systems. With China's overwhelming presence throughout the battery production supply chain, Chinese companies are poised to maintain substantial advantages and market share for powering clean energy technologies that rely on batteries, likely requiring U.S. manufacturers to rely on suppliers and IP from China at least for the short and medium term.[625] Moreover, the proliferation of Chinese batteries within U.S. networks, including vital energy infrastructures, creates cyber security-related concerns, vulnerabilities to remote manipulation, and sabotage. Experts indicate that Chinese-made batteries heighten the risk of espionage or unforeseen energy supply disruptions and system failures as they become further integrated into critical U.S. operations.[626] Recent U.S. policies have taken limited steps to address these challenges, specifically provisions in the Inflation Reduction Act incentivizing domestic production of clean energy vehicles and the recent Advanced Notice of Proposed Rulemaking to study risks from connected vehicles and associated systems.

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CHAPTER 4: UNSAFE AND UNREGULATED CHINESE CONSUMER GOODS: CHALLENGES IN ENFORCING IMPORT REGULATIONS AND LAWS

Abstract

The rapid escalation of e-commerce sales impedes U.S. efforts to ensure the safety and regulatory compliance of consumer products flooding the market from China. These new channels, combined with China's reinvigorated focus on export manufacturing as a pillar of economic growth, mean that Chinese factories will remain major suppliers across the consumer products space. Though the quality of goods sourced from China has improved somewhat over the past two decades as a result of increased due diligence and monitoring on the factory floor, significant exceptions remain, and overall product quality and safety still fall short of U.S. standards. Many Chinese companies that disregard manufacturing best practices utilize cross-border e-commerce channels to send products directly to consumers under a de minimis exemption that provides duty-free entry for small parcel shipments. A continually rising flood of small parcels at U.S. ports of entry compounds the difficulty of detecting potentially risky products before they reach households and children. Holding Chinese manufacturers and exporters accountable remains challenging—if not virtually impossible—under the Xi regime. Moreover, China is home to the world's largest counterfeiting industry, harming not only U.S. businesses but also consumers who face increased safety risks from shoddily made imitations. Accurate data on consumer product imports are crucial to enforcement, but an increased number of Chinese exporters are seeking to exploit loopholes in U.S. law and disguise the nature and/or origins of their imports to dodge higher tariffs on products from China.

Key Findings

- China aims to continue growing its manufacturing sector, leading to further industrial overcapacity and a surge in exports. Chinese manufacturers have, in general, improved in quality and reliability over the past decade, owing in part to increased enforcement by Chinese authorities domestically and increased due diligence by foreign firms. However, the scale and dynamism of China's manufacturing sector means regulators in the United States struggle to respond to emergent product safety issues. New online platforms and the multitude of third-party e-commerce sellers and resellers compound these issues.

- U.S. regulators are overwhelmed by the volume of imports arriving from China, and they are only able to inspect a small fraction of imports, potentially leaving large numbers of unsafe or illegal goods to enter the U.S. market daily.
- Unscrupulous China-based sellers lack the diligence, capacity, and skill required to produce high-quality goods that meet U.S. safety regulations, thus increasing U.S. consumers' exposure to risks stemming from unsafe, counterfeit, and poor-quality goods from China. These deceptive tactics by Chinese producers are particularly concerning in industries such as batteries and medical products, where defective products pose potentially debilitating or deadly consequences.
- U.S. import regulators face significant challenges in monitoring the growing volume of Chinese e-commerce shipments specifically, which typically enter under a de minimis exemption that provides duty-free treatment for parcels valued under $800. The growth of smaller, China-based sellers on U.S. e-commerce sites and the rising popularity of Chinese e-commerce platforms present a novel and growing risk to U.S. consumers and the ability to enforce safety regulations and other laws. Insufficient data, personnel, and overwhelming volume mean these shipments receive less scrutiny.
- Some Chinese companies have tried to circumvent normal U.S. customs channels in response to tariffs and other U.S. laws. Though the true scale of customs fraud is unknowable, some actors are using illegal tactics such as transshipment, circumvention, and import undervaluation to evade paying customs duties. These tactics worsen the information available to U.S. agencies, increasing the challenge of identifying hazardous imports.

Recommendations

The Commission recommends:

- With respect to imports sold through an online marketplace, Congress eliminate Section 321 of the Tariff Act of 1930 (also known as the "de minimis" exemption), which allows goods valued under $800 to enter the United States duty free and, for all practical purposes, with less rigorous regulatory inspection. Congress should provide U.S. Customs and Border Protection adequate resources, including staff and technology, for implementation, monitoring, and enforcement.
- Congress amend the Consumer Product Safety Act to (1) grant the U.S. Consumer Product Safety Commission (CPSC) unilateral mandatory recall authority over products where the Chinese seller is unresponsive to requests from the CPSC for further information or to initiate a voluntary recall and the CPSC has evidence of a substantial product hazard, defined as either failing to comply with any CPSC rule, regulation, standard, or ban or posing a substantial risk of injury to the public; and (2) classify Chinese e-commerce platforms as distributors to allow for enforcement of recalls and other safety standards for products sold on these platforms.

- Congress direct the U.S. Department of Homeland Security and U.S. Customs and Border Protection, in conjunction with the U.S. Department of Commerce, to develop assessment tools capable of identifying the true origins of parts, components, and materials contained in products entering the United States to prevent tariff evasion and limit safety and security risks in light of the increasing complexity of global supply chains.
- Congress require that the U.S. Trade Representative, in consultation with the U.S. Department of Commerce, the U.S. International Trade Commission, and other entities, as appropriate, prepare a comprehensive report within 90 days on the operation of the U.S.-Mexico-Canada Trade Agreement since its entry into force that provides data and information on:
  - Chinese-affiliated investments in Mexico and Canada and specific information on their production of goods and how those goods may enter the U.S. market either as finished products or as components in other products;
  - Trade flows of products produced in China to Mexico and Canada and how such trade flows have changed;
  - Prices of products produced in China shipped to Mexico and Canada as well as products shipped through those countries to the United States and how those prices relate to the prices of such goods shipped directly into the U.S. market; and
  - Trade enforcement actions by Mexico and Canada regarding Chinese-produced products (including those transshipped through third countries' markets) and how such actions relate to U.S. trade enforcement actions.
- Congress amend applicable laws to mandate that online marketplaces clearly disclose on product listings for Chinese-made goods the name, physical address, and contact information for the manufacturer. The online marketplaces should also be required to clearly display a warning label that the item is manufactured in a country that does not comply with U.S. consumer safety standards.
- Congress direct the U.S. Government Accountability Office to investigate the reliability of safety testing certifications for consumer products and medical devices imported from China.

Introduction

According to data provided by the U.S. Census Bureau, the United States imported $426.9 billion in goods from China in 2023, although this undercounts e-commerce sales.[1] Everything from water heaters to consumer electronic products to pool drain covers and children's toys are made in factories across China and then shipped into the U.S. market. In most cases, these Chinese-made products present minimal to no health and safety risks to U.S. consumers, in part due to efforts by U.S.-based importers and retailers to vet and monitor the quality of manufacturing taking place in China. However, changing consumption patterns and marketing and sell-

ing strategies by Chinese firms are increasingly exposing U.S. consumers to poorly made and poorly regulated goods from China. A large and increasing portion of imports from China comes from online shopping—and specifically by the purchase of consumer goods through e-commerce platforms with direct delivery to homes. These platforms directly connect U.S. consumers to China-based manufacturers that often lack the diligence, capacity, and skill required to produce high-quality goods that meet U.S. safety regulations. Moreover, since these firms are based in China, they generally lie outside the reach of U.S. regulators, courts, and law enforcement agencies. They are therefore able to sell unsafe goods directly into the U.S. market and are unlikely to ever be held accountable for the harm these products cause. These problems are further compounded by the limited capacity to monitor the millions of small parcels that enter the U.S. market duty free each day under a de minimis exemption.* As a result, billions of dollars of potentially unsafe, hazardous, and even deadly goods are shipped from China directly to the doorsteps of U.S. homes every year, presenting a risk to U.S. consumers and firms alike.

U.S. information on imports from China is hampered by illegal and duplicitous behavior by some Chinese exporters. Billions of dollars' worth of counterfeit goods from China are seized each year by U.S. customs authorities, although this is likely just a fraction of the knockoff goods sold into the U.S. market. In addition to infringing on intellectual property rights (IPR) and causing financial and reputational harm to U.S. businesses, Chinese counterfeits may lack the safety features and materials of legitimate products, posing hazards to U.S. consumers from toxic materials and other risks. Parallel to this behavior, an increased number of exporters are seeking to avoid or evade U.S. customs duties. Recent U.S. trade actions taken since 2018 resulted in increased tariffs on two-thirds of goods entering the U.S. market from China, creating an increased financial incentive to game the U.S. import process and mitigate tariff burdens. Though the true scale of illegal behavior is unknowable, anecdotal evidence suggests a rising number of companies are employing tactics like transshipment, circumvention, and evasion to avoid tariffs, amplifying the challenges facing U.S. customs officials.

This chapter begins with an overview of the challenges in assuring the quality of China-based producers, which are amplified by the scale of China's manufacturing sector as well as challenges in ensuring the quality of goods from China-based producers. The chapter considers the difficulties of enforcing tariffs and regulations on Chinese imports at the border and the tactics used to evade detection. The chapter then examines the safety and reliability of goods from China and considers the challenges U.S. regulators face in monitor-

*On September 13, 2024, the Biden Administration announced that it intended to release two Notices of Proposed Rulemaking that would modify the de minimis exemption. These include rules that would make goods subject to tariffs under Section 232 of the Trade Expansion Act of 1962 as well as Section 201 and Section 301 of the Trade Act of 1974 ineligible for de minimis entry and expand the information required on de minimis customs invoices. The Biden Administration also announced that the U.S. Consumer Product Safety Commission plans to propose a final rule that requires all importers of consumer products to electronically file product certificates, which attest that a product complies with U.S. product safety laws and regulations. As of October 11, 2024, these rulemakings have not been released. White House, *Biden-Harris Administration Announces New Actions to Protect American Consumers, Workers, and Businesses by Cracking Down on De Minimis Shipments with Unsafe, Unfairly Traded Products*, September 13, 2024.

ing imports from China. This portion also pays special attention to the impact e-commerce has on consumer product safety and U.S. regulators' burdens. This chapter draws on the Commission's 2024 hearing on "Consumer Products from China: Safety, Regulations, and Supply Chains," consultations with policy experts, and open source research and analysis.

U.S. Consumer Product Sourcing from China

The sheer volume of products entering from China poses a fundamental challenge to the effective enforcement of U.S. laws, regulations, and trade measures. This issue is especially acute in the consumer products sector, which constitutes roughly half of China's exports to the United States.[2] China is the largest source of consumer goods for the United States, accounting for over 25 percent of U.S. consumer product imports in 2023.[3] This total, amounting to $210.2 billion, exceeded the combined value of consumer products sourced from the United States' next four largest trading partners.[4] Chinese producers likely have an even larger role in the consumer products space than these data indicate, as they undercount e-commerce shipments and also do not reflect China's expanding role as a supplier of manufacturing inputs. China's export manufacturing capacity will likely expand further as China's government focuses on export manufacturing as a pillar of economic growth amid the economy's slowdown. (For more, see Chapter 1, "U.S.-China Economic and Trade Relations (Year in Review).") As a consequence, the manufacturing practices and standards of Chinese manufacturers will continue to have an outsized impact on the safety and quality of goods for sale in the U.S. market.

In addition to this overwhelming volume of goods, U.S. regulators are also sifting through a growing number of factories in China that are sending goods into the U.S. market. The number of companies in China involved in its traded goods sector grew 29 percent between 2019 and 2023, with over 645,000 businesses in China undertaking either import or export activities by the end of 2023.[5] This growth was partly driven by an acceleration in direct-to-consumer e-commerce trade, which expanded during the COVID-19 pandemic as quarantine measures pushed consumers to rely more on online channels for shopping.[6] According to China's customs agency, total e-commerce exports have grown from $92 billion in 2018 to $262 billion in 2023, increasing 36 percent on average each year.[7] E-commerce trade now accounts for 7.7 percent of China's overall exports.[8] In 2023, China reported that more than 100,000 different companies participated in cross-border e-commerce transactions.[9] The United States is the largest export market for China-based e-commerce sellers.[10] Chinese e-commerce firms sent $97.9 billion in goods to the United States in 2023, equivalent to nearly 20 percent of China's total U.S.-bound exports, according to China's customs agency.*[11]

*The United States does not produce an official estimate on imports that were sold through an e-commerce platform. Many, but not all, e-commerce shipments enter under the United States' de minimis exemption, which provides duty-free treatment for parcels valued under $800. U.S. Customs and Border Protection reports that de minimis imports from China totaled $10.4 billion in fiscal year 2021 (the most recent year showing shipments by country), but this estimate may be unreliable due to the difficulty in recording and verifying the value of individual parcels. George Serletis, "U.S. Section 321 Imports Surge with Rising E-Commerce Shipments from China," *U.S. International Trade Commission*, November 2023; Josh Zumbrun, "The $67 Billion Tariff

The growth in firms selling directly to U.S. consumers poses a challenge for U.S. regulators in monitoring imports, enforcing U.S. regulations, and identifying bad actors.* Additionally, U.S. businesses that source products from China-based manufacturers continue to encounter difficulties due to unscrupulous tactics employed by some Chinese manufacturers.

Challenges in Ensuring the Quality of China-Based Producers

Many foreign firms hire quality control (QC) inspectors in China to ensure Chinese manufacturers meet global standards; however, corruption and gamesmanship frequently undermine the integrity of these inspections. Corruption in the QC inspection process is a common issue facing foreign firms seeking to produce in China. Some Chinese factory owners attempt to influence QC inspectors through a variety of means, from overt cash offers to more subtle forms of compensation like free entertainment.[12] In addition, QC inspectors themselves may seek to extort suppliers by threatening to submit an unfavorable report unless the supplier offers compensation.[13] Attempted and realized extortion by both inspectors and suppliers adds uncertainty to U.S. firms' assessments of Chinese manufacturers' production quality. U.S. firms looking to conduct regular QC inspections in China must therefore carefully vet and rotate inspectors to avoid this risk, a process that adds time and cost to production.[14] In addition, there is a cottage industry of consultants in China helping factories pass inspections by any means necessary. In 2021, the *South China Morning Post* investigated these consultants by placing an ad for a fictitious factory looking for help selling to European buyers.[15] One Shanghai-based consultant responded to the ad by saying, "As long as you cooperate, keep the troublemakers out of the factory on inspection day, and make sure workers follow our guidance on answering questions, we will guarantee you pass."[16] Beyond coaching employees, these consultants can provide forged records and time cards and can even bring auditors to a "show factory"—a different plant that is more aligned with "Western" production standards.[17]

Even when a U.S. firm believes it has found a quality manufacturer, it can be difficult to ensure that Chinese producers continue to adhere to contractually agreed-upon standards. Some foreign purchasers experience quality fade, a phenomenon where a manufacturer begins cutting corners to reduce costs and increase profits, resulting in decreased product quality. AsiaInspection,† a third-party QC service, analyzed data on thousands of in-factory quality checks from 2018 and found that 26 percent of made-in-China products were manufactured outside of quality specifications.[18] In addition to variance in product quality, U.S. purchasers reportedly face the risk

Dodge That's Undermining U.S. Trade Policy," *Wall Street Journal*, April 25, 2022; U.S. Customs and Border Protection, *Section 321 De Minimis Shipments: Fiscal Year 2018 to 2021 Statistics*, October 2021.

*One method used by the U.S. Consumer Product Safety Commission, which is charged with enforcing U.S. product safety rules and regulations, to identify hazardous imports is to screen for entities that have previously violated U.S. regulations or that have not previously imported regulated products. Jim Joholske, written response to questions for the record for the U.S.-China Economic and Security Review Commission, *Hearing on Consumer Products from China: Safety, Regulations, and Supply Chains*, March 1, 2024, 2.

†AsiaInspection is now called QIMA.

of their Chinese manufacturers suddenly going out of business.[19] Chinese producers—particularly those operating in low-tech, labor-intensive industries like textiles, clothing, shoes, and toys—face rising competition from other countries with low-wage manufacturing, like Vietnam.[20] As Dan Harris, founder of the international law firm Harris Sliwoski, observes, some Chinese manufacturers have suddenly gone out of business without informing their U.S. purchaser, leaving the U.S. firm without a supplier and sometimes without the product they purchased.[21] The number of bankruptcies in China has risen since 2016, when the Party-state launched a deleveraging campaign to curtail lending from the "shadow" or informal banking system.* According to aggregated statistics provided by China's Supreme People's Court, the number of bankruptcy filings accepted in Chinese courts increased from roughly 5,000 filings in 2016 to more than 15,000 in 2021.† [22]

U.S. firms' ability to seek relief for unsatisfactory production is further undermined by the China Export & Credit Insurance Corporation, or Sinosure, which appears to engage in extorting foreign firms.[23] Sinosure is China's only state-owned policy-oriented credit insurer, and as a result, it enjoys a strong position in the export credit insurance market.[24] Sinosure facilitates trade with China by providing insurance to Chinese manufacturers that sell to foreign purchasers on credit; if a foreign purchaser defaults on payment, Sinosure will compensate the Chinese manufacturer.[25] However, according to Mr. Harris, issues with this system arise when Chinese manufacturers deliver poor-quality or hazardous goods and the foreign purchaser refuses to pay the balance owed or requests new products. The Chinese manufacturer contacts Sinosure, which then demands payment from the foreign purchaser on behalf of the manufacturer, threatening to sue the purchaser in either China or their home country. Mr. Harris testified before the Commission that in some cases, Sinosure will put the foreign purchaser on a blacklist and refuse to provide insurance to Chinese manufacturers seeking to supply to that purchaser.[26] The foreign purchaser must then either pay for all its products in full up front and accept greater risk of being defrauded by the manufacturer or else effectively be banned from purchasing Chinese exports. Left with few options, many foreign purchasers end up paying for the defective and sometimes even undelivered products.[27] Mr. Harris argues that Sinosure's aggressive approach to repayment effectively subsidizes low-quality Chinese manufacturers.[28] Meanwhile, U.S. businesses

*Shadow banking refers to banking services that are provided by non-bank financial institutions outside of the regulatory structure of the formal banking system. China's shadow banking sector ballooned after 2009 as banks channeled funds to off-balance-sheet entities to circumvent restrictions on credit growth, and informal or non-bank lending accounted for 31 percent of total credit growth between 2012 and 2016. As China started to regulate these channels and tighten access to credit after 2016, many borrowers from shadow banks were suddenly cut off from new credit, and rising default rates forced China's banking system to absorb a growing volume of non-performing assets. This had the effect of raising borrowing costs economy-wide and squeezing non-state firms' access to new credit as banks sought to avoid taking on new credit risk by charging higher interest rates. This impacted businesses' capacity to refinance or roll over debt, contributing to rising defaults. Logan Wright, "Grasping Shadows: The Politics of China's Deleveraging Campaign," *Center for Strategic and International Studies*, April 2023.

†Chinese bankruptcy data understate the number of defunct companies, as many smaller companies choose to settle with creditors outside of court. China has established new specialized bankruptcy courts across China since 2019 in an effort to improve the bankruptcy process and reduce delays and other frictions in bankruptcy proceedings. Bo Li and Jacopo Ponticelli, "Going Bankrupt in China," *Review of Finance* 26:3 (2022): 456–458, 466.

and consumers may struggle to sue a Chinese counterparty in both U.S. and Chinese courts.*[29]

Challenges to Tariff Enforcement at the Border

The China Section 301 tariff actions are unprecedented in the recent history of U.S. trade policy. The United States has not previously raised import duties on such a large volume of imports sourced from a single country. Since 2018, U.S. Customs and Border Protection (CBP) has assessed $231 billion in Section 301 duties on imports from China, roughly equivalent to $39 billion per year.[30] This exceeds the $35 billion in duties collected by CBP in fiscal year (FY) 2017 from all countries across all trade duties and remedies.[31] These duties created a significant financial incentive for firms to reduce their tariff burden, including through legal offramps from paying import duties and through tactics to evade tariffs illegally. Firms' attempts to utilize exceptions and exploit gaps in tariff enforcement have created acute challenges for U.S. customs authorities.

Chinese Exporters Use Small Parcel Shipments to Avoid U.S. Import Duties

Since 2017, cross-border e-commerce trade between the United States and China has surged as Chinese exporters take advantage of the de minimis customs exemption to avoid Section 301 tariffs and other import duties, violating the original intent of the law.† The de minimis rule is a provision in U.S. law that authorizes the customs authority to waive most import duties on shipments imported by "one person on one day," provided that the combined value of the shipments is less than $800.[32] In contrast, China's own de minimis threshold is less than $10.[33] (For more, see Appendix I, "United States' Top 15 Trading Partners' De Minimis Thresholds.") Between FY 2018 and FY 2023, the annual volume of de minimis imports from all countries more than doubled to reach one billion small parcels (see Figure 1).[34] By comparison, the number of shipments entering the U.S. market through formal customs channels, which excludes de minimis entries but includes containers offloaded at ports, increased only 4.9 percent from 35 million in FY 2018 to 36.7 million in FY 2023.‡[35] The volume of de minimis shipments has continued to grow disproportionately, with an average of nearly

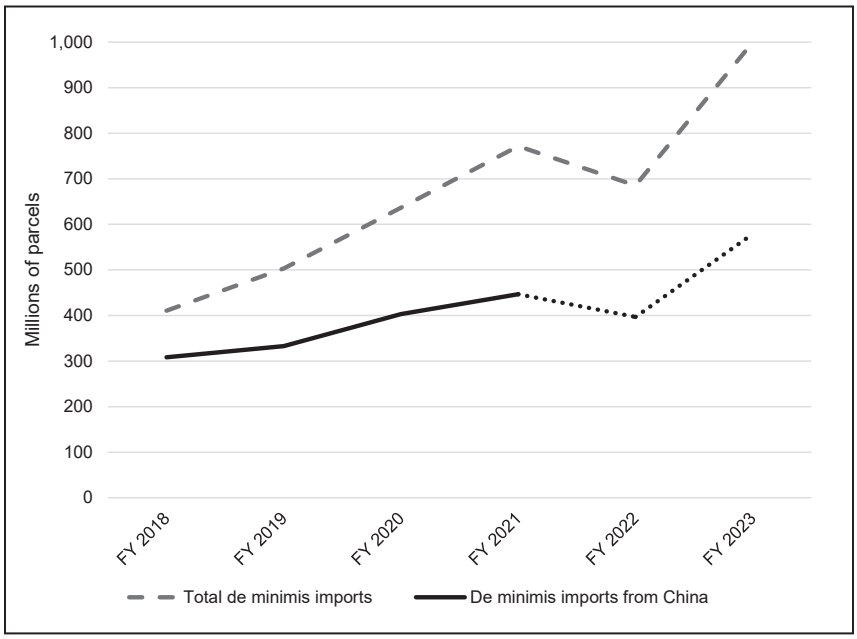
*For more on China's selective enforcement of contract law, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 1, "Rule by Law: China's Increasingly Global Legal Reach," in *2023 Annual Report to Congress*, November 2023, 175–222.

†The de minimis exemption was introduced in 1938 as an amendment to the Tariff Act of 1930. The exemption was intended to exempt low-value shipments from standard customs procedures, where the administrative costs of collecting tariffs would otherwise outweigh the revenue generated. The threshold was initially set at $5 for bona fide gifts and souvenirs and other items acquired abroad by travelers and $1 for all other cases, including commercial merchandise. Congress raised the latter threshold to $5 in 1978 before increasing it to $200 in the Customs Modernization Act of 1994. It was raised to the current level of $800 in the Trade Facilitation and Trade Enforcement Act of 2015, which was aimed at facilitating cross-border e-commerce trade for small foreign sellers on platforms such as eBay. Charles Benoit, "'De Minimis' in Customs Law: How Express Shippers Turned an Administrative Customs Provision into an Instrument of Economic Devastation and Lawlessness at Ports," *Coalition for a Prosperous America*, November 2021, 3, 5, 7–8.

‡An importer is required to file an entry summary to enter merchandise into U.S. commerce, which CBP uses to assess whether the cargo is admissible and determine the duties owed. Generally, an importer can either file a formal entry or, if the merchandise is valued under $2,500, file an informal entry and make use of simplified customs procedures. Shipments valued under $800 may be eligible for de minimis entry, and importers do not need to file entry summaries. Informal Entry Procedures, 19 C.F.R. §128.24, 2016.

four million de minimis shipments entering the United States each day between October 2023 and June 2024.[36] The majority of these packages were likely imported from China. In FY 2021—the most recent period for which CBP has produced country-level data—imports from China accounted for 58 percent of the total 771 million de minimis entries.[37]

Figure 1: Volume of U.S. De Minimis Imports from China (FY 2018–FY 2023)



Note: CBP has only published data on China's share of de minimis imports up to FY 2021. The projection for Chinese shipments after FY 2022, shown by the dotted line segment, is based on the ratio of Chinese de minimis packages to total de minimis imports in FY 2021. Given the rapid growth of Chinese e-commerce platforms Shein and Temu in recent years, using FY 2021 as a baseline likely underestimates the current volume of de minimis shipments from China.
Source: U.S. Customs and Border Protection, *E-Commerce*, August 22, 2024; U.S. Customs and Border Protection, *Section 321 De Minimis Shipments: Fiscal Year 2018 to 2021 Statistics*, October 2022, 3.

The surge in de minimis imports coincided with both an expansion in U.S. e-commerce consumption during the COVID-19 pandemic and the imposition of the China Section 301 duties. This suggests some Chinese firms utilized direct-to-consumer e-commerce channels to avoid paying higher tariffs. Products targeted by most U.S. trade remedies, including Section 301 tariffs, remain eligible for duty-free treatment under the de minimis exemption, provided shipments meet the $800 value threshold.[38] Products subject to an antidumping and countervailing duty (AD/CVD) order, though, are not eligible for de minimis entry.[39] Chinese companies in sectors heavily targeted by U.S. Section 301 duties have utilized e-commerce channels to avoid paying duties. The apparel sector is illustrative. The Section 301 tariff actions applied a 7.5 percent tariff to 90 percent of U.S. apparel imports from China (relative to 2017 import levels).[40] The

Chinese fast-fashion company Shein has since developed expansive logistics operations based on using small parcel shipments that fall below the de minimis threshold.[41] Along with the Chinese e-commerce platform Temu, these companies are estimated to account for over half of all de minimis shipments from China.[42] In total, one study estimates that as a result of de minimis imports, $7.8 billion in duties were avoided in 2021, equivalent to 9.2 percent of total duties collected that year.[43]

The de minimis exemption also allows Chinese exporters to use fulfillment centers and warehouses in Mexico and Canada to "wash" bulk shipments of tariffs. CBP evaluates the "one person on one day" condition at the time of importation to the United States, meaning Chinese exporters can place goods in a bonded warehouse across the U.S. border until it makes a sale through a direct-to-consumer e-commerce channel.*[44] This enables exporters to use ocean-borne shipping to transport Chinese products in bulk to bonded warehouses located in Canada or Mexico before breaking the containerized shipment into individual parcels that fall below the U.S. de minimis threshold.†[45] Though CBP has not published data on the volume of Chinese de minimis packages entering indirectly through border warehousing, data on truck-borne de minimis imports suggest a growing number of firms are taking advantage of such schemes. Between FY 2020 and FY 2023, de minimis packages carried by truck into the United States grew from 97 million to 170 million and now make up nearly 20 percent of all de minimis bills of lading.[46] Although Canadian and Mexican products likely constitute a significant portion of these imports given these producers' proximity to the U.S. border, the volume of de minimis packages that enter via overland routes still exceeds the combined number of parcels sourced from these two U.S. neighbors.‡ Instead, tens of millions of these packages were likely sourced from other overseas countries utilizing warehousing schemes.[47]

CBP has the authority to adjust the de minimis exemption without additional legislation. The statute underlying the de minimis exemption—Section 321 of the Tariff Act of 1930—authorizes CBP to waive duties on shipments valued under $800, but it can also create rules to deny de minimis treatment when it "is necessary for any reason to protect the revenue or to prevent unlawful importations."[48] Elizabeth Drake, partner at Schagrin Associates, testified before the Commission that CBP "already has the discretion to deny

*Bulk shipments sent directly to a U.S.-based bonded warehouse or free trade zone are not eligible for the de minimis exemption, as the receiving entity is considered the importer of record for the purposes of determining the "one person." U.S. International Trade Commission, *Foreign Trade Zones (FTZs): Effects of FTZ Policies and Practices on U.S. Firms Operating in U.S. FTZs and under Similar Programs in Canada and Mexico*, April 2023, 98–99, 220–221.

†Importers can even use U.S. ports of entry to receive ocean-borne freight as part of these schemes to utilize the de minimis exemption. For example, some third-party logistics providers load containers that arrive at the Ports of Los Angeles and Long Beach onto trucks and drive the containers in-bond across the border to fulfillment centers in Tijuana, Mexico. *Economist*, "How Chinese Goods Dodge American Tariffs," June 27, 2024; Josh Zumbrun, "The $67 Billion Tariff Dodge That's Undermining U.S. Trade Policy," *Wall Street Journal*, April 25, 2022.

‡In FY 2021, 65 million and 22 million de minimis shipments were produced and sourced from Canada and Mexico, respectively. This includes packages carried by air freight, which is by far the most prevalent transportation method, and only a portion of these totals reflects shipments carried overland. By comparison, 109 million de minimis parcels crossed the U.S. border on trucks during the same time period. U.S. Customs and Border Protection, *E-Commerce*, April 10, 2024; U.S. Customs and Border Protection, *Section 321 De Minimis Shipments: Fiscal Year 2018 to 2021 Statistics*, October 2022, 3.

de minimis treatment in order to protect the revenue or to ensure the effective enforcement of import admissibility standards," including to address issues related to health and safety, enforcement of the Uyghur Forced Labor Prevention Act, imports of fentanyl and fentanyl precursors (see textbox below), and other imports that violate U.S. regulations.[49] CBP could prevent shipments subject to Section 301 duties and other trade remedies from entering under the de minimis provision through an administrative ruling.[50]

Chinese Fentanyl Traffickers Exploit the De Minimis Rule to Skirt Detection

Chinese chemical manufacturers have exploited e-commerce channels, including international mail and express consignment operations, to route fentanyl and fentanyl-related substances (such as precursors) into the United States, contributing to the U.S. opioid crisis. Direct shipments of fentanyl from Chinese drug makers to U.S. doorsteps had risen up until 2019, when China "scheduled" the entire class of fentanyl-type drugs—meaning the production and export of these drugs is banned without special government permits—significantly reducing the flow of finished drugs.[51] At the time, however, China scheduled just two of the numerous precursor chemicals used to synthesize fentanyl,* and Chinese entities subsequently shifted to supply North America-based drug traffickers with other fentanyl inputs.[52] China is now the primary supplier of chemicals and materials for synthesizing fentanyl to Mexican cartels and other criminal groups operating in the United States.[53]

De minimis shipments serve as a key vector linking these supply chains as Chinese entities exploit the less stringent reporting requirements and minimal likelihood of inspection.† Some Mexico-based criminal groups have found it easier to first ship fentanyl materials to the United States under de minimis provisions, smuggle them across the border for further processing, and then send the drug back into the United States.[54] These chemicals are widely and easily available on Chinese e-commerce storefronts. In 2024, a team of Reuters reporters was able to procure all the chemicals needed to produce fentanyl by placing orders with Chinese online sellers, some of whom provided recipes for synthesizing fentanyl from their products.[55] Moreover, unlike many other

*Fentanyl can be synthesized directly from a wide range of chemicals, called precursors. Drug makers also make use of pre-precursors to produce precursors for fentanyl manufacturing. The International Narcotics Control Board has identified 153 fentanyl-related substances that currently have no other legitimate uses. Ricardo Barrios, Susan V. Lawrence, and Liana W. Rosen, "China Primer: Illicit Fentanyl and China's Role," *Congressional Research Service* CRS IF 10890, February 20, 2024.

†Given the overwhelming volume of small parcels entering the United States, U.S. regulators rely on advanced electronic data, automated screening, and other data sources to identify shipments that may contain opioids or other illegal goods. However, CBP states that it cleared over 685 million de minimis shipments with insufficient data to properly determine risk in FY 2022. In addition, the U.S. Department of Homeland Security Office of the Inspector General concluded in 2023 that "CBP did not consistently target for additional inspection or evaluate potentially inadmissible international mail entering the United States through its nine [international mail facilities]," and it has not fully implemented requirements to utilize advanced electronic data as required in the Synthetics Trafficking and Overdose Prevention Act of 2018 (STOP Act). U.S. Department of Homeland Security, Office of Inspector General, *CBP Did Not Effectively Conduct International Mail Screening or Implement the STOP Act (Redacted)*, September 25, 2023; U.S. Customs and Border Protection, Commercial Customs Operations Advisory Committee, *Government Issue Paper, Next Generation Facilitation Subcommittee, E-Commerce Task Force*, June 2023.

Chinese Fentanyl Traffickers Exploit the De Minimis Rule to Skirt Detection—*Continued*

illegal drugs, large-scale production of fentanyl does not depend on industrial-scale supplies of chemicals, and small parcel shipments of inputs can yield large quantities of the product. Just one kilo of the precursor 1-boc-4 piperidone is enough to produce 750,000 fentanyl tablets.[56] Economists Timothy J. Moore, William W. Olney, and Benjamin Hansen link increased state-level imports to a rise in opioid deaths, estimating that fentanyl smuggled through legal customs channels killed approximately 14,000–20,000 Americans per year, accounting for 30–40 percent of all opioid deaths between 2017 and 2020.*[57]

Though China has taken recent steps to curb the flow of fentanyl-related material, cooperation with the United States remains limited. In August 2024, China announced that it would expand regulatory controls to cover three additional fentanyl precursors.[58] This move came two years after UN member states agreed to subject these inputs to international restrictions.[59] (For more on U.S.-China counternarcotics diplomacy, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).") However, as of October 11, 2024, China has not placed controls on other common fentanyl precursors, despite continued U.S. diplomatic pressure.†[60]

Illicit Actors Evade Tariffs through Customs Fraud

The increase in tariffs on Chinese products created a significant incentive to lower or evade U.S. import duties, leading to an increase in trade-related fraud. To avoid paying duties, firms may employ a wide range of illegal and deceptive tactics, with two being particularly prominent.[61] First, importers may file false invoices with U.S. customs to evade tariffs, misreporting the nature of the merchandise through tactics including undervaluation, product misclassification, and other methods.[62] Second, importers may employ transshipment and circumvention schemes to route goods through third country markets to obtain a more favorable duty rate.[63]

The number of customs violations penalized by the U.S. government rose following the introduction of the China Section 301 tariffs and other trade measures aimed at China. Between October 2018 and September 2019—the first fiscal year after the Office of the U.S. Trade Representative initiated the China Section 301 trade actions—CBP collected $30.1 million in penalties and liquidated

*This study relied on import data from the U.S. Census Bureau, which does not include de minimis shipments.

†For example, China currently does not have control measures for N-Phenethyl-4-piperidone (NPP) and 4-Anilino-N-phenethylpiperidine (ANPP), two precursors that are extensively used by Mexican drug cartels in fentanyl production. These chemicals, among others, are included in Table I of the 1988 UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, to which China is a signatory. The agreement requires members to take measures to prevent the distribution of listed substances for the illicit manufacture of drugs and maintain systems to monitor manufacture and distribution of listed substances for legitimate purposes. John Coyne and Liam Auliciems, "No, China Isn't Really Suppressing Its Production of Fentanyl Precursors," *The Strategist*, August 23, 2024; International Narcotics Control Board, "Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances: 2019," February 27, 2020, 47, 106–107, 108.

damages* related to customs violations, double the value collected in FY 2018.[64] In FY 2022, the most recent period for which CBP has published data, this amount fell back to $19.3 million, yet CBP still issued nearly twice as many penalties and liquidated damages compared to FY 2018, suggesting that the frequency of infractions remains above norm.[65] The import value related to these infractions is not available. CBP also collected $78 million in unpaid duties as a result of audits in FY 2022 and identified $97 million in lost value or revenue through investigations into AD/CVD evasion under its Enforce and Protect Act (EAPA) authority, up from $42 million resulting from audits and $15 million from EAPA investigations in FY 2018.[66] It is likely that additional illicit activity has gone undetected. Though it is difficult to estimate the true scale of illegal activity, signs suggest that trade misinvoicing and illegal transshipment have grown more rampant since 2018.

Duty Evasion through False Import Declarations

The declining quality of U.S. import data points toward systemic tariff avoidance. U.S. duty assessment is based on customs documentation filed by importers, creating an incentive to misreport the nature of the imported merchandise.[67] Such tactics include underreporting the value of the shipment or misclassifying the merchandise as a different Harmonized Tariff System (HTS) heading to obtain a lower duty.[68] According to the U.S. Government Accountability Office (GAO), "Many trade-related documents, such as purchase orders, invoices, and customs documents, are vulnerable to fraudulent manipulation."[69] Because such evasive activity leads to a poor-quality data environment, it is not possible to accurately measure the impact of illicit import invoices. However, researchers have taken advantage of discrepancies in trade data gathered by U.S. and Chinese statistical authorities to approximate the level of trade fraud; though U.S. tariffs create a financial incentive to falsify information reported to U.S. customs, they have little effect on companies' incentives to file accurate export invoices with Chinese customs. According to these studies, importers may be understating their U.S. imports by tens of billions of dollars per year (for more, see textbox below).[70]

Customs Fraud, De Minimis Shipments, and Worsening Data on the U.S.-China Trade Deficit

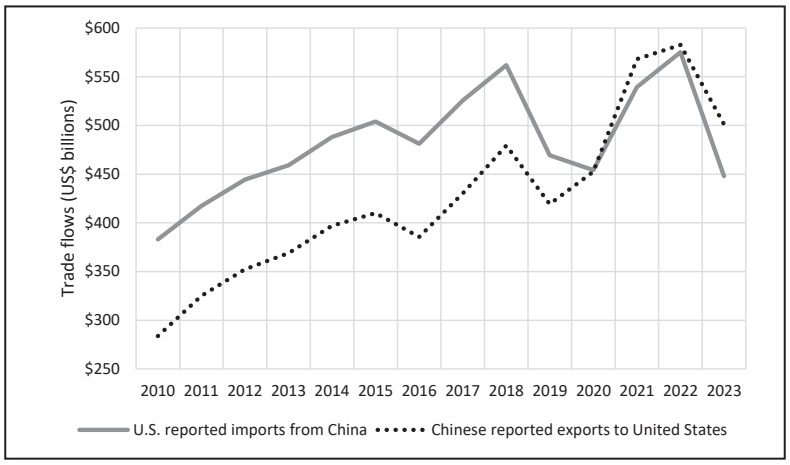
The true value of the bilateral trade deficit between the United States and China is likely tens of billions of dollars higher than reported in official U.S. trade estimates. U.S. data on imports from China are based on customs declarations, meaning that tariff evasion creates errors in aggregate U.S. trade data and leads to discrepancies with the trade data reported by Chinese customs author-

*CBP has legislative authority to issue penalties for filing fraudulent customs documentation and other tactics to evade customs enforcement. In addition, many importers are required to purchase importation bonds, which are surety bonds that form a contract between CBP and the importer. If the importer breaches its obligations under the bond, including by violating trade laws and regulations, CBP can collect liquidated damages against the import bond. U.S. Customs and Border Protection, *What Every Member of the Trade Community Should Know About: Customs Administrative Enforcement Process: Fines, Penalties, Forfeitures, and Liquidated Damages*, February 2004, 25, 40; Government Accountability Office, *Civil Fines and Penalties Debt: Review of U.S. Customs Service's Management and Collection Process*, May 2002, 9.

Customs Fraud, De Minimis Shipments, and Worsening Data on the U.S.-China Trade Deficit—*Continued*

ities. Mirror trade analysis is a commonly used technique to identify false or missing customs declarations based on differences in trade reported by the customs agencies of the exporting and importing nations.*[71] Prior to 2018, the U.S. Census Bureau's estimates on imports of goods from China have exceeded the equivalent figure from China's customs agency by an average of $95 billion, largely owing to financial incentives for Chinese firms to underreport the value of exports to Chinese customs to receive tax advantages under China's value-added tax regime prior to 2018.[72] However, this pattern has reversed since the Section 301 tariffs went into effect (see Figure 2). In 2020, the gap between U.S. and Chinese data all but disappeared as the United States reported a steeper decline in imports than China.[73] Economists at the U.S. Federal Reserve estimate that $55 billion in value is missing from U.S. import data due to firms' efforts to avoid U.S. tariffs.†[74] Because of this evasion, Adam Wolfe, emerging markets economist for Absolute Strategy Research, assesses that "Chinese data are likely more reliable since U.S.-based firms have a financial incentive to understate their imports to avoid paying higher tariffs."[75]

Figure 2: Disappearing Gap in Reported Goods Imports from China: U.S. vs. Chinese Data, 2010–2023



Source: United Nations Statistics Division, "UN Comtrade Database."

*As reviewed in a recent GAO report, mirror trade analysis has significant limitations when it comes to identifying illicit trade behavior. Legitimate reasons for trade gaps may exist, such as differing customs valuation methodologies between different countries. U.S. Government Accountability Office, *Trade-Based Money Laundering: U.S. Government Has Worked with Partners to Combat the Threat, but Could Strengthen Its Efforts*, April 2020, 57–59.

†The change in the reported data was also a result of Chinese exporters overstating the value of shipments to Chinese customs. China lowered the gross value-added tax and raised the value-added tax rebate on exports after the tariffs went into effect, changing the incentives for Chinese firms to report the value of their exports. Economists Hunter L. Clark and Anna Wong find that the value-added tax effect caused China's reported exports to increase (leading to a smaller gap in U.S.-China trade data), but this effect was marginal compared to the undervaluation effect in U.S. import data. Hunter L. Clark and Anna Wong, "Did the U.S. Bilateral Goods Deficit with China Increase or Decrease during the US-China Trade Conflict?" *U.S. Federal Reserve*, June 21, 2021.

Customs Fraud, De Minimis Shipments, and Worsening Data on the U.S.-China Trade Deficit—*Continued*

Two tactics to avoid tariffs are likely to blame for the deterioration in the quality of U.S. trade data. First, some U.S.-based importers have evaded tariffs by illicitly misreporting the value of shipments to U.S. customs officials, since underreporting the value reduces the gross import tax assessed on each shipment.[76] Second, shipments valued less than $800 that utilize the de minimis exemption are not included in the U.S. Census Bureau's trade estimates.[77] This data gap alone leaves potentially tens of billions of dollars in unaccounted imports from China-based e-commerce companies; CBP estimates that $54.5 billion in de minimis shipments from all countries entered the United States in FY 2023.*[78]

Distorted trade data may prevent U.S. policymakers from designing effective trade and supply chain policies and obscure the true extent of the United States' continued reliance on Chinese manufacturers. For instance, recorded U.S. imports of clothing from China have declined 39 percent between 2018 and 2023, according to U.S. customs data; however, estimates indicate that textile and apparel products make up around half of all de minimis shipments entering the United States.[79] Moreover, these problematic data potentially compromise the U.S. government's ability to evaluate the impact of tariffs on the U.S. economy. For instance, the U.S. International Trade Commission's 2023 *Economic Impact of Section 232 and 301 Tariffs on U.S. Industries* report relies on U.S. Census Bureau data to model the impact of the tariffs on trade, production, and prices, and its findings could be flawed if the data are problematic.[80]

Legal action targeting evasion of China Section 301 tariffs has been limited. To date, the U.S. government has penalized only a few instances of Section 301 evasion under the False Claims Act (FCA), which prohibits making false statements or otherwise defrauding the U.S. government, including false customs documentation.[81] The FCA contains a whistleblower provision whereby a person can file a lawsuit based on allegations of fraud against the government, including customs evasion, and be financially rewarded for it.† Up to May 2024, the U.S. government has reached settlements in four cases under the FCA that involved evasion of China Section 301

*The consistency of the de minimis value estimates produced by CBP is questionable. The Coalition for a Prosperous America asserts that CBP relies only on data submitted through electronic manifests, which cover only a portion of the shipments. Compared to CBP's estimate of $46.5 billion in imports in FY 2021, the organization instead estimates that the United States imported $188 billion in de minimis shipments in 2022. A separate study based on data on shipments valued under $800 from three global carriers implies that the average shipment was valued at $120 in 2021. This suggests that FY 2021 de minimis imports totaled $82.2 billion. Pablo D. Fajgelbaum and Amit Khandelwal, "The Value of De Minimis Imports," *NBER Working Paper*, June 2024, 7, 17; Charles Benoit, "Falsehoods & Facts: The Truth about De Minimis," *Coalition for a Prosperous America*, August 14, 2023.

†In a successful case, the whistleblower receives a monetary reward worth 15–30 percent of the funds recovered by the government, incentivizing private citizens to act as bounty hunters. Jonathan Tycko, "A Statistical Analysis of the Government's Settlement of False Claims Act Lawsuits Alleging Evasion of Customs Duties," *National Law Review*, August 3, 2023.

duties, with settlements totaling $5.7 million.[82] These cases likely reflect only a portion of the ongoing litigation, as other cases may be held under seal within the U.S. court system until a settlement or judgment is reached.*[83] Historically, the amount of time required to complete an FCA customs case—from filing the case to reaching a settlement—averaged 3.1 years.[84] However, the FCA may be underutilized to pursue customs evasion due to the complexities of such cases. For instance, the U.S. Department of Justice has the option to intervene and take over a case, a move that increases the chances of success due to the resources available to government prosecutors.†[85] The government is less likely to intervene in cases involving smaller financial stakes or where the evidence is not particularly strong.[86] A whistleblower may choose to litigate a case independently, but they will need to bear the legal costs themselves. Customs fraud cases may be particularly complex to litigate independently given the complicated and often arcane nature of U.S. customs regulations.[87] In addition, potential whistleblowers may be located outside the United States, making them reticent to file out of fear of retaliatory action.‡

Whistleblower lawsuits under the FCA complement direct governmental authorities to pursue customs fraud. CBP has a statutory mandate to detect and penalize customs fraud under the Tariff Act of 1930.[88] To aid its enforcement efforts, CBP provides a monetary incentive, separate from the FCA provisions, for whistleblowers to flag instances of evasion and transshipment.[89] However, CBP is not required to respond to or publicly report on the results of investigations into such allegations.[90] As Ms. Drake testified before the Commission, the enforcement process is opaque, and "the private sector has no formal role in helping Customs guard against evasion" of customs duties other than AD/CVD.[91] In contrast, the tools available to combat AD/CVD evasion—the anti-circumvention statute administered by the U.S. Department of Commerce and the Enforce and Protect Act (EAPA) authorities administered by CBP—provide specific timelines and statutory requirements to involve private petitioners and have been viewed as highly effective.[92] (For more, see Appendix II, "Authorities for Combating Evasion of U.S. Customs

*When an FCA case is filed with a court, the court initially places the case under seal for 60 days, but the U.S. government may request the court extend the seal so it can conduct its investigation. While the case is under seal, the court will not acknowledge the existence of the lawsuit, and the case will not appear on the court's publicly available electronic docket (PACER). Jonathan Tycko, "Can a False Claims Act *Qui Tam* Case, Alleging Customs Fraud, Be Filed and Pursued Anonymously?" *National Law Review*, February 8, 2024.

†The U.S. Department of Justice created a "Trade Fraud Task Force" to lead its efforts on trade-related crimes and coordinate with other agencies, such as CBP, on ensuring compliance with U.S. trade laws. However, some assess that the task force has limited capacity given the scale of international trade crime it faces. Camille Edwards and Olga Torres, "DOJ Involvement in the Enforcement of Trade and National Security Laws," *JD Supra*, April 23, 2024; U.S. Representatives Mike Gallagher and Raja Krishnamoorthi, *Letter to the Honorable Alejandro Mayorkas*, January 19, 2024, 4.

‡The FCA allows for foreign whistleblowers to file cases of fraud against the U.S. government, but they may not be afforded the same whistleblower protections as U.S. citizens or employees of U.S. companies. Though such lawsuits can be filed anonymously, the identity of the whistleblower may be easy to deduce once the court case is unsealed. The FCA includes a provision that offers relief to employees who experience retaliation or job loss for filing fraud allegations, including reinstatement to their position. However, for employees working overseas, the process of filing a claim of retaliation is complex, and the provision may not extend to foreign companies not governed by U.S. law. Tycko & Zavareei, "International Whistleblower Protections;" Jason Zuckerman and R. Scott Oswald, "Whistleblowers: What Protections and Forms of Relief Are Available for Foreign-Based Employees," *Employment Law Group*, 2011, 24–25.

Duties: Antidumping and Countervailing Duties vs. Section 301 and Other Tariffs.")

Transshipment and Circumvention through Third Country Markets

Trade data indicate that some countries have emerged as hubs for the transshipment of goods and duty evasion through circumvention strategies. As U.S. imports shifted to third countries, some Chinese exporters sought to lower their tariff burden by transiting goods through these new export hubs. In 2019, Vietnam's customs agency identified dozens of products destined for the United States that were imported from China and given "made in Vietnam" labels.[93] Closely related to transshipment is duty circumvention, which involves importing products subject to an AD/CVD order or components of those products into a third country, doing minimal additional processing (e.g., assembling components), and exporting the final product as originating in the country of minimal processing.*[94] It is challenging, however, to quantify the full extent of transshipment and circumvention (see textbox below). Between FY 2017 and FY 2023, CBP completed more than 200 investigations into AD/CVD evasion under the EAPA and identified $1.2 billion in duties owed to the U.S. government.[95]

Evaluating Transshipment and Circumvention Based on Trade Data

As documented by a number of scholars, third countries that increased their exports to the United States since 2017 frequently increased imports from China of the exact same product codes they were shipping to the United States, suggesting that finished goods were merely being rerouted through other economies.[96] However, the correlation between third countries' imports from China and exports to the United States may also reflect legitimate trade. Rules of origin can be complicated and very product-specific. Even when a product imported from China is exported without a change in its tariff classification, a domestic manufacturer can significantly transform the good in a way that meets U.S. criteria for country of origin. Further, the apparent flow of Chinese products through these markets may instead reflect imports for final demand by these countries. Since producers in other economies may struggle to match the cost efficiency of Chinese production, these economies may purchase low-cost goods from China for domestic consumption as well as engage in some level of additional processing for re-export to the United States. For instance, after the United States placed an AD/CVD on Chinese solar panels in the early 2010s, Chinese solar companies sought out other markets for their subsidized production, causing shipments of solar products that were previously bound for the United States to shift to countries such as Malaysia.[97] Many of these Chinese imports were used for solar installation

*AD/CVD circumvention as defined in the Tariff Act of 1930 also covers making minor alterations in the original country so that the product falls outside the coverage of the AD/CVD order while still retaining the same general characteristics. Tariff Act of 1930 § 1677j, Pub. L. 71-361, codified at 19 U.S. Code § 1677j, 1994.

Evaluating Transshipment and Circumvention Based on Trade Data—*Continued*

in Malaysia.[98] Meanwhile, Malaysia's domestic solar industry expanded rapidly, fueled by investments from Chinese and South Korean solar producers.[99] Since they could not compete domestically on cost with unfairly traded Chinese imports, this production was exported.[100] Some Malaysia-based production involved minimal additional processing of imported Chinese components and was found by the Commerce Department to constitute evasion of U.S. trade remedy duties on Chinese imports.[101] Some of the new production, however, involved substantial manufacturing in Malaysia and was not found by the Commerce Department to constitute circumvention.[102] These facts demonstrate that transshipment and evasion activities can occur alongside legitimate trade flows.*[103]

Transshipment and circumvention can create risks for the United States by obscuring an import's source country and factory, increasing the challenge of securing supply chains against regions known for hazardous or unethical sourcing and production practices. For instance, China is the world's largest importer of timber that is at high risk of having been cut through illegal logging, the import of which is banned in the United States.[104] Since 2017, an accelerating volume of wooden furniture appeared to flow from China into Vietnam for export to the United States, raising the risk that unethically or illegally sourced timber enters the domestic market.[105] More fundamentally, Chinese exporters that are willing to transship products illegally are also less likely to adhere to U.S. safety and quality standards, as exemplified by the "honey laundering" practice of Chinese honey producers. Since the United States placed antidumping duties on Chinese honey in 2001, Chinese producers used transshipment schemes involving Thailand, Malaysia, the Philippines, Russia, and other countries to continue accessing the U.S. market, some of which involved adulterating the honey to obscure its origin, affecting the quality and safety of the honey.[106] Due to these ongoing tactics, in 2020 CBP released a strategy for testing honey imports to verify the country of origin and detect adulteration.[107]

Chinese State Support for Overseas Manufacturing Likely Perpetuates Economic Distortions

Chinese companies, particularly those that benefit from state support, are seeking to avoid tariffs by moving production overseas. Previously, when the United States used AD/CVD orders to address non-market support in certain Chinese sectors, some Chinese com-

*On August 18, 2023, the Commerce Department issued its final determination on circumvention of AD/CVD orders on solar cells and modules from China. It concluded that five firms located in Cambodia, Thailand, and Vietnam were re-exporting Chinese solar products to evade U.S. duties. It investigated two companies operating in Malaysia—South Korea's Hanwha Q Cells and China's Jinko Solar—but determined that these companies were not circumventing the orders. The department also placed a country-wide circumvention finding on all four economies, meaning that all exporters in these markets must certify that they are not circumventing the AD/CVD orders before they are allowed to import the product under the most-favored-nation tariff. U.S. Department of Commerce, *Final Determination of Circumvention Inquiries of Solar Cells and Modules from China*, August 18, 2023.

panies responded by setting up factories overseas to continue exporting to the United States. Despite being located outside of China, many of these manufacturers continued to benefit from Chinese government support and sell goods at less than market value. Ms. Drake notes multiple examples where Chinese companies increased outbound investment after the United States reached an affirmative finding in investigations and applied duties.[108] Chinese tire manufacturers that were impacted by U.S. AD/CVD orders on passenger vehicle and light truck tires (issued in 2015) and truck and bus tires (issued in 2019) subsequently set up plants in Thailand, Vietnam, and Taiwan.[109] Exports from these economies have since surged. Between 2020 and 2022, U.S. imports of truck and bus tires from Thailand more than doubled from 4.7 million units to 10.2 million units.[110] Three Chinese companies have opened factories in Thailand since 2017, helping drive the surge in exports.*[111] Following a petition from the United Steelworkers, the Commerce Department initiated an antidumping investigation into imports of these tires from Thailand in November 2023, and in October 2024 it found that Thailand-based tire manufacturers were dumping their products in the United States.[112] Since 2017, similar patterns have emerged or accelerated in other sectors subject to U.S. AD/CVD orders, including China's quartz producers and its steel industry.[113]

Such producers may benefit from Chinese policies to push manufacturing capacity overseas. Though the true level of non-market support to overseas production platforms is difficult to quantify, the Commerce Department as well as multiple analysts assess that their scale is growing.[114] The Party-state has long supported Chinese companies with surplus industrial capacity to set up facilities overseas. (For more on the role of Chinese producers in U.S. imports from Vietnam and other third countries, see Chapter 1, "U.S.-China Economic and Trade Relations (Year in Review).") At the 2014 China-ASEAN Summit, then Premier Li Keqiang stated that China encourages "competitive Chinese producers of iron and steel, cement and plate, etc. to shift their operation to ASEAN countries to meet the local need of infrastructure development through investment, leasing, and loan lending so as to achieve mutual benefit."[115] China's Belt and Road Initiative widened financing channels to support foreign direct investment (FDI) in member countries, and many of the projects financed by China's policy banks, including China Exim Bank and China Development Bank, involved overseas production facilities in steel, textiles, metals, and other areas where China has domestic surplus capacity.[116] Though these policies are not specific to companies subject to antidumping or antisubsidy measures, some companies have taken advantage of China's "Going Out" policy† and the Belt and Road Initiative explicitly to avoid such duties. For in-

*In its AD/CVD investigation of truck and bus tires from China, the Commerce Department found that one of these companies, Double Coin Holding, benefited from state subsidies. In 2017, the Commerce Department assessed a 38.6 percent subsidy rate on Double Coin in addition to an economy-wide 22.6 percent dumping rate. Meanwhile, Double Coin invested $285 million to set up a factory in Thailand, which began producing tires for the U.S. market in 2018. *Tire Business*, "Double Coin Shipping to U.S. from New Thai Factory," April 12, 2018; U.S. International Trade Administration, *Commerce Finds Dumping and Subsidization of Imports of Truck and Bus Tires from the People's Republic of China*, January 23, 2017.

†After 1999, China promulgated the "Going Out" strategy to accelerate overseas investment by Chinese companies. Subsequent implementing regulations simplified the approval process and relaxed requirements for overseas investment projects. Nargiza Salidjanova, "Going Out:

stance, China National Building Material, which produces glass fibers among other industrial materials, established subsidiaries in 2012 in Egypt for the explicit purpose of avoiding trade remedies imposed by the EU that began in 2011.[117] An executive of one of the subsidiaries, Jushi, stated, "If you export fiberglass to Europe from China, you have to pay antidumping and antisubsidy duties of 24.8 percent, not to mention the tariff. There is no tariff if you export to Europe or the Middle East from Egypt, nor any antidumping and antisubsidy duties."[118] The European Commission subsequently initiated an antisubsidy investigation into Jushi's Egypt production over support provided by China. In 2020, the EU imposed countervailing duties on certain glass fiber products from Egypt (see textbox below).[119]

EU Antisubsidy Investigations Document How Chinese State Support Is Funneled through Overseas Special Economic Zones

The EU has applied its antisubsidy and antidumping laws in novel ways to respond to Chinese subsidies to overseas subsidiaries. The European Commission's investigation into state support for Egypt-based subsidiaries of Chinese companies in the fiberglass industry concluded in 2020, resulting in AD/CVD orders targeting exports from entities based in both Egypt and China.[120] The investigation found that the Chinese-owned entities received support from the Chinese government through a special economic zone set up jointly by the two governments called the China-Egypt Suez Economic and Trade Cooperation Zone.[121] The commission concluded that the companies in the zone benefited from various forms of state support, including preferential loans from Chinese banks, loans and capital injections from the state-owned parent companies, and direct subsidies from the Egyptian government.[122] While the details of the financing arrangements were not fully disclosed by the parties involved,* Chinese state support clearly assisted the development of Chinese industrial champions in Egypt.[123] Notably, the European Commission attributed Chinese state support to the Egyptian government, using a legal workaround in order to apply EU antisubsidy laws to the case. The treatment of transnational subsidies remains a contested issue under the WTO Agreement on Subsidies and Countervailing Measures, with differing interpretations on whether the subsidy recipient must be located in the same territory as the government or public body providing the aid.†[124] Instead of

An Overview of China's Outward Foreign Direct Investment," *U.S.-China Economic and Security Review Commission*, March 30, 2011, 5.

*For example, as the banks involved did not provide their credit risk assessments for the financing in question, the commission instead compared the interest rates to market indicators, reaching the conclusion that the interest rates offered were below market rates. European Commission, *Commission Implementing Regulation (EU) 2020/776 of 12 June 2020 Imposing Definitive Countervailing Duties on Imports of Certain Woven and/or Stitched Glass Fibre Fabrics Originating in the People's Republic of China and Egypt and Amending Commission Implementing Regulation (EU) 2020/492 Imposing Definitive Anti-Dumping Duties on Imports of Certain Woven and/or Stitched Glass Fibre Fabrics Originating in the People's Republic of China and Egypt*, *EUR-Lex*, June 15, 2020, 104–108.

†Separate from the transnational subsidy issue, the United States alleges that prior rulings at the WTO hamper efforts to punish China's unfair trade practices. As a result of another U.S.-China dispute in 2008, the WTO determined that Chinese state-owned enterprises and Chi-

EU Antisubsidy Investigations Document How Chinese State Support Is Funneled through Overseas Special Economic Zones—*Continued*

ruling on the matter, the European Commission determined that Egypt had actively sought and cooperated with China to invite the financial support to the special economic zone, which enabled the commission to make a ruling under its existing antisubsidy statutes.[125]

In 2022, the European Commission applied a similar reasoning to impose countervailing duties on steel producers in Indonesia that benefited from Chinese support.*[126] At Indonesia's request, the WTO established a dispute settlement panel in May 2023 to examine whether the EU acted inconsistently with the Agreement on Subsidies and Countervailing Measures when it attributed Chinese financial contributions to the Indonesian government.†[127]

Before 2024, the United States did not treat cross-border support to Chinese production facilities located in third countries as countervailable subsidies.[128] Prior to a policy revision issued in March 2024, the Commerce Department's regulations precluded the agency from countervailing cross-border support for production.‡[129] Consequently, it has only ever assessed support provided by the host government to domestic enterprises in previous countervailing duty investigations.[130] Additionally, the "non-market economy" methodology for the Commerce Department's antidumping investigations prevented the government from examining cases where a producer in a market economy, such as India, benefited from equipment and raw material imported from China at below-market prices.[131] In March 2024, the Commerce Department updated its methodology

nese state commercial banks would not be considered "public bodies." The WTO opined that the United States was imposing excess AD/CVDs because it was too broad in its interpretation of "public body" and, consequently, its assessment of China's state subsidies. "The mere fact that a government is the majority shareholder of an entity does not demonstrate that the government exercises meaningful control over the conduct of that entity, much less that the government has bestowed it with governmental authority." World Trade Organization, "United States—Definitive Anti-Dumping and Countervailing Duties on Certain Products from China: Appellate Body Report," 2011, 123, 130.

*The support was linked to the Indonesian Morowali Industrial Park, which is focused on building a stainless steel industry. China cooperated with Indonesia to build the industrial park. European Commission, *Commission Implementing Regulation (EU) 2022/433 of 15 March 2022 Imposing Definitive Countervailing Duties on Imports of Stainless Steel Cold-Rolled Flat Products Originating in India and Indonesia and Amending Implementing Regulation (EU) 2021/2012 Imposing a Definitive Anti-Dumping Duty and Definitively Collecting the Provisional Duty Imposed on Imports of Stainless Steel Cold-Rolled Flat Products Originating in India and Indonesia*, March 15, 2022, 105–106.

†The European Commission also investigated ongoing circumvention activities, and in May 2024 it imposed duties on Taiwan, Turkey, and Vietnam after it found that steel from Indonesia was being shipped through these countries to the EU with minimal additional processing. European Commission, *Commission Fights Circumvention of Tariffs on Imports of Cold-Rolled Stainless Steel*, May 7, 2024.

‡When the Commerce Department self-imposed this rule on its AD/CVD proceedings, it believed a government "would not normally be motivated to promote, at what would be considerable cost to its own taxpayers, manufacturing or higher employment in foreign countries." However, the Commerce Department now judges that such cases have become more prevalent, citing China's support for overseas special economic zones as an example. U.S. Department of Commerce, "Regulations Improving and Strengthening the Enforcement of Trade Remedies Through the Administration of the Antidumping and Countervailing Duty Laws," *Federal Register* 89:58 (March 25, 2024): 20827.

for AD/CVD investigations, removing the restriction on investigating transnational subsidies and clarifying when it can determine a "particular market situation" exists, enabling it to take distorted costs and inputs in cross-border trade into account in antidumping proceedings.[132] In May 2024, pursuant to an industry petition, the Commerce Department launched AD/CVD investigations into solar cells and modules produced in Cambodia, Malaysia, Thailand, and Vietnam to assess potential unfair trade practices, including alleged instances of transnational subsidies provided by Chinese policy banks.*[133]

Consumer Safety Enforcement inside China's Domestic Market

In the past 15 years, China has significantly strengthened and expanded its domestic consumer product safety regulatory regime following a deadly food safety scandal. In 2008, an estimated 300,000 infants and young children across China fell ill and six babies died after consuming milk powder containing melamine, an industrial chemical used in plastics and fertilizer.[134] The melamine was intentionally added to the powder by the producer in order to fool tests that measure protein content.[135] Following the events of the scandal, in 2009 the Standing Committee of the National People's Congress repealed the country's 1995 Food Hygiene Law and replaced it with the significantly expanded Food Safety Law.[136] This revised regulation contained 104 articles, created the country's Food Safety Commission, and established a national food recall system, among other acts.[137] The Chinese government has amended and expanded the Food Safety Law several times, including in 2015 and most recently in 2023.[138] Alongside revising food safety for domestic production, the Chinese government significantly expanded regulations for cosmetics and medical devices as well.[139] The government also implemented a significant bureaucratic reorganization to consolidate and streamline market regulation. In 2018, the government created the State Administration for Market Regulation (SAMR), which consolidated the function of several previously independent agencies responsible for regulating a range of products, including food, drugs, toys, and consumer goods.[140] SAMR has a broad mandate, replacing the China Food and Drug Administration to regulate drug safety supervision and overseeing production permits for industrial products, product quality inspections, the reporting system for product quality and product recalls, and anti-counterfeiting efforts.[141]

Despite this bureaucratic reorganization and wide-ranging regulatory expansion, the Chinese government remains unable to effectively regulate consumer and food products, creating risks for

*The Commerce Department issued a preliminary affirmative determination in October 2024, and it set countervailing duty rates on solar products from these four countries. The agency also calculated preliminary countervailing duty rates for companies that benefited from policy lending from Chinese banks under the Belt and Road Initiative under an application of "facts available" for non-cooperative respondents. However, it also preliminarily assessed that none of the respondents that complied with the investigation benefited from these Chinese programs. U.S. Department of Commerce, *Preliminary Affirmative Determinations in the Countervailing Duty Investigations of Crystalline Photovoltaic Cells Whether or Not Assembled into Modules from Cambodia, Malaysia, Thailand and Vietnam*, October 1, 2024; U.S. Department of Commerce, International Trade Administration, *Decision Memorandum for the Preliminary Affirmative Determination in the Countervailing Duty Investigation of Crystalline Silicon Photovoltaic Cells, Whether or Not Assembled into Modules, from Malaysia*, September 30, 2024, 46.

Chinese and U.S. consumers. A 2018 study conducted by researchers from Tsinghua University and University of Cambridge found that 12 percent of toys purchased from Taobao—an e-commerce website owned by Alibaba that operates almost exclusively in China—contained lead levels exceeding China's regulatory standard for paints in toy manufacturing.[142] When compared against U.S. lead standards, the percentage of offensive toys increased to nearly 36 percent.[143] In July 2024, Chinese state media reported that shipping companies were using the same tanker trucks to carry cooking oil and toxic liquids without cleaning the trucks in between, leading to an investigation by Chinese authorities.[144] In addition to exposing Chinese consumers to health and safety risks, the Chinese government's inability to set and uniformly enforce product safety regulations has led to policy inconsistency, which harms Chinese and international firms operating in China alike. In a 2024 white paper, the American Chamber of Commerce in China (AmCham China) noted that the requirements facing U.S. cosmetic companies to register and file a review for foreign-made cosmetic products are "not sufficiently transparent, with inconsistent standards of review, and sometimes unclear conclusions, affecting the registration process of cosmetics" while creating inefficiencies and raising costs.[145]

Instead of improving product safety, the Chinese government has at times leveraged it to undercut foreign firms operating in China while punishing foreign governments for undesirable policies. In June 2021, China's General Administration of Customs (GAC) released a list of "quality and safety unqualified" products from 16 companies, including H&M, Nike, and Zara.[146] The GAC's announcement was part of a broader campaign by the Chinese government targeting U.S. and other foreign firms in retaliation for their statements against forced labor in China's western province of Xinjiang as well as actions taken by their home governments. Six months before the Customs Administration announcement, in January 2021, CBP began banning cotton and tomato products from Xinjiang pursuant to an order by the Trump Administration.[147] By March 2021, Britain, Canada, and the EU had all joined the United States in imposing sanctions on China for its abuses in the region.[148] In retaliation, the Chinese government took a series of actions meant to decrease the availability and profitability of major U.S., European, and Japanese clothing brands sold in the Chinese market. Chinese state media fomented an ostensibly grassroots call for a boycott of H&M, resurfacing a statement the company made the prior year confirming that it had stopped sourcing Xinjiang cotton due to forced labor concerns.[149] H&M's products were then removed from Chinese e-commerce websites, and the addresses for its approximately 500 stores in China were removed from the ride-hailing app Didi Chuxing.[150] Apps associated with Nike and Adidas were pulled, and Chinese celebrities exited endorsement deals with these and other foreign companies.[151] The accusations by China's customs agency of unsafe products further galvanized Chinese consumers, who switched away from foreign brands in favor of domestic producers, resulting in U.S. firms like Nike losing market share to Chinese competitors like Anta Sports and Li Ning.[152]

U.S. Import Regulations and Consumer Goods from China

Trends in Health and Safety in China-Based Manufacturing

China is a primary source of consumer product imports for the United States, with e-commerce becoming an increasingly important pathway for U.S. consumers to purchase goods from China. Since 2000, the proportion of U.S. consumers shopping online increased from 22 percent to 79 percent.[153] At the same time, the number of China-based sellers on U.S. e-commerce sites as well as the number of U.S. users shopping on Chinese e-commerce websites has increased substantially. In December 2023, almost 49 percent of Amazon's top third-party sellers were based in China, up from 18 percent in January 2017.[154] Similarly, in 2022 nearly half of all new third-party sellers on Walmart.com were based in China.[155] In parallel, Chinese e-commerce platforms Shein and Temu have experienced a recent boom in popularity among U.S. users. Between September 2022 and October 2023, the number of monthly active U.S. users on Shein almost doubled from 27 million to 51 million, while the number of Temu users increased from just 1.5 million to over 133 million during the same period.[156] The business models of these e-commerce platforms often facilitate the direct shipment of consumer goods from China-based manufacturers to U.S. consumers.

The safety and quality of imported consumer goods from China has historically been a concern for the United States, with product issues reaching a peak in 2007. Dubbed the "Year of the Recall" by *Consumer Reports*, in 2007 millions of units of Chinese-made products were recalled for serious health and safety violations, including one million cribs presenting strangulation risks, 175 million pieces of children's jewelry made with hazardous levels of lead, and 175,000 Curious George plush dolls contaminated with lead, among other products.*[157] While these recalls affected a variety of goods, children faced a disproportionately high risk; of the 448 recalls issued by the Consumer Product Safety Commission (CPSC) in 2007, 52 percent were for children's products.†[158] Unfortunately, the consequences of using these unsafe goods were severe in many cases. In a 2007 recall notice for drop-side cribs, CPSC stated it was aware of at least two infant deaths associated with the crib and noted that a third was under investigation.[159] By 2010, the number of recalled drop-side cribs had increased to over nine million, and the number of reported deaths rose to over 30 in the United States alone.[160] Flaws existed in both the design and materials of the cribs, manufacturing of which had been outsourced to China; drop-side cribs could be installed incorrectly by parents, and plastic materials that were less sturdy than traditional wood and metal cribs could

*Product recalls were not limited to consumer goods and also included food products regulated by the Food and Drug Administration (FDA), including five types of farmed fish and seafood containing traces of antifungals and antibiotics. Kayla Webley, "List of Problem Chinese Imports Grows," *NPR*, July 10, 200.

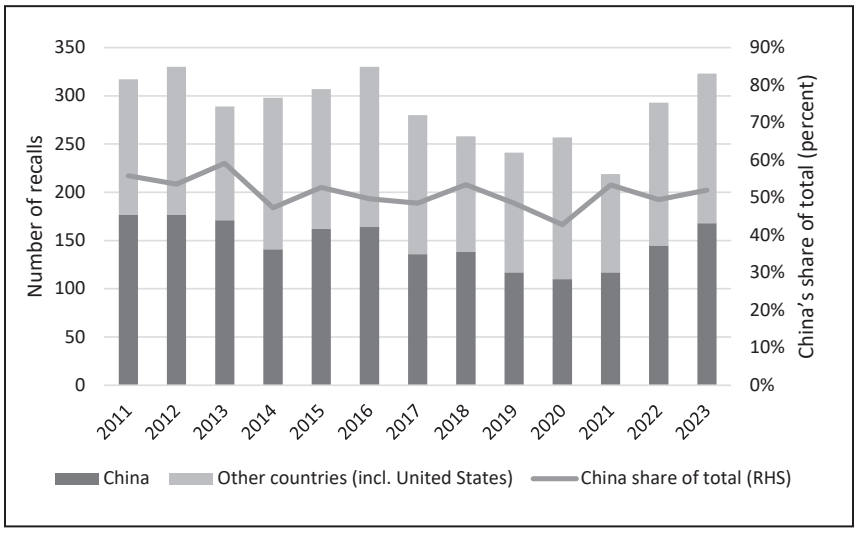
†In 2005 and 2006, CPSC issued 321 and 320 recalls, respectively. In 2007, the number of recalls increased 40 percent to 448. Kids in Danger, "2007: The Year of the Recall: An Examination of Children's Product Recalls in 2007 and the Implications for Child Safety," February 2008, 1; U.S. Consumer Product Safety Commission, "Recalls *[2005–2007]*."

fail and break.*[161] Risks of unsafe Chinese-made products were not just limited to human consumers. In 2007, pet food made with melamine-tainted wheat gluten supplied by Chinese manufacturers was linked to the death of as many as 8,500 pet cats and dogs.[162]

A significant legislative overhaul in consumer product safety regulations increased CPSC capacity and authority and preceded a steady decrease in CPSC-issued recalls up to 2021. In 2008, Congress passed the Consumer Product Safety Improvement Act (CPSIA) both as a response to the series of high-profile recalls made the year prior and as the culmination of grassroots efforts to improve product safety, particularly in goods made for children.[163] CPSIA provided CPSC with an expanded set of regulatory and enforcement tools and included provisions addressing myriad issues like lead, phthalates, toy safety, third-party testing and certification, and civil and criminal penalties, among others.[164] Critically, CPSIA created the first comprehensive and publicly available consumer incident database, which allows the public to report product hazards they have experienced and research others' reports of harm.[165]

CPSIA led to some progress in product safety, but issues persist, particularly for Chinese-made goods. After CPSIA passed, product recalls trended down through 2021.[166] Since 2021, however, the number of recalls has jumped. Between 2021 and 2023, the number of recalls issued by CPSC increased 47 percent, rising from 219 to 323.[167] The annual number of recalls for products made in China also increased by 44 percent over the same period, from 117 to 168.[168] For well over a decade, Chinese-made goods have been the source of roughly half of all recalls (see Figure 3).[169]

Figure 3: Recalls Issued by CPSC, 2011–2023

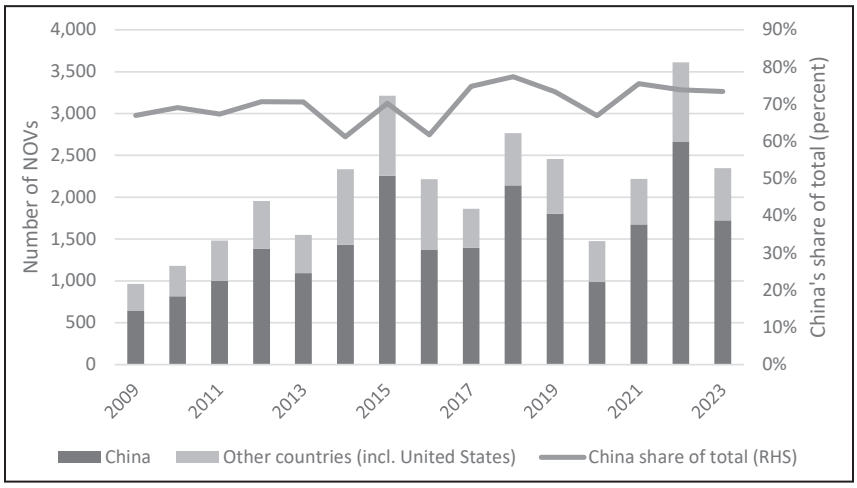


Source: U.S. Consumer Product Safety Commission, "Recalls–*Manufactured In* [2011–2023]."

*In 2010, CPSC voted to ban all drop side cribs from the U.S. market due to risks inherent in their design. U.S. Consumer Product Safety Commission, *CPSC Approves Strong New Crib Safety Standards to Ensure a Safe Sleep for Babies and Toddlers*, December 17, 2010.

In addition to recalls, CPSC has a variety of other tools to alert producers and the public of unsafe products, including notices of violation (NOVs). An NOV is an official determination by CPSC given to a company indicating when a mandatory product standard has been violated.[170] While recalls declined between 2009 and 2021, the number of NOVs trended up over that time frame, especially for products made in China (see Figure 4). In 2009, CPSC issued 963 NOVs in total, with 645 of those notices issued for products made in China.[171] By 2023, total NOVs had risen to 2,347, while NOVs for Chinese products reached 1,724, accounting for roughly three-fourths of the total NOVs that year.[172] Since 2009, Chinese-made goods have consistently accounted for between 60 and 80 percent of NOVs.[173]

Figure 4: NOVs Issued by CPSC, 2009–2023



Source: U.S. Consumer Product Safety Commission, "Violations–*LOA Date, Country* [2009–2023]," April 23, 2024.

According to CPSC, in 2019 in the United States, consumer products (domestically produced and imported) were involved in 50,900 deaths and over 36 million injuries.[174] CPSC estimates that consumer product-related incidents cost the United States $1 trillion each year, including deaths, injuries, and property damage.[175]

These persistent and increasing concerns regarding the safety of consumer products from China are driven in part by rising e-commerce imports bought from third-party sellers. Although it is not possible to draw a causal relationship between the number of Chinese-made goods entering the United States and rising recall and NOV counts with the data presented, it should be noted that these trends have occurred against a backdrop of rising e-commerce shipments from China.[176] In a 2019 investigative report, the *Wall Street Journal* found 10,870 items for sale on Amazon that had been declared unsafe or banned by federal regulators were deceptively labeled, or lacked federally required warnings.*[177] Of the 1,934 sell-

*These products were listed between May and August of 2019. After Amazon was informed of the items, 83 percent of the over 10,000 items listed were taken down or altered as of August 23, 2019.

ers of these goods whose addresses could be determined, 54 percent were based in China.[178] The true number of China-based sellers could be higher, since Chinese producers may list a U.S. reshipping warehouse as their location, giving consumers the impression that a good is from a U.S. seller.[179] China-based sellers have been consistently linked to unsafe, hazardous, and low-quality products. For example, in April 2024, CPSC issued a recall for children's multipurpose helmets imported by the Chinese company Fengwang Sports and sold exclusively on Temu.[180] The helmets "do not comply with the positional stability, dynamic strength of retention system, impact attenuation, and certification requirements in violation of the CPSC federal safety regulation" and can fail to protect riders in the event of a crash.[181] In 2023, a similar recall was issued for helmets produced and sold by a Chinese company offered exclusively through Amazon.[182]

Direct-to-consumer e-commerce platforms are also leading venues for Chinese counterfeit goods entering the United States, undermining U.S. companies' efforts to provide high-quality and safe goods to consumers. According to data published by CBP, China and Hong Kong are the largest sources of counterfeits entering the United States, accounting for 83.6 percent of counterfeit seizures by value in FY 2023.*[183] Of the estimated $2.76 billion in retail value of counterfeits seized by CBP in FY 2023, products from China and Hong Kong totaled $1.82 billion and $488 million, respectively.†[184] According to the Office of the U.S. Trade Representative's *2023 Review of Notorious Markets for Counterfeiting and Piracy*, China is the number one source of counterfeit products in the world.[185] The review named multiple online platforms, including Temu's Chinese domestic counterpart Pinduoduo and physical market locations in China.[186] Daniel Shapiro, senior vice president of brand relationships and strategic partnerships at brand protection provider Red Points, testified before the Commission that among e-commerce platforms, Chinese marketplaces that ship internationally are by far the largest source of counterfeits; just over 85 percent of all China-originated IPR infringements reported by Red Points came from Chinese e-commerce platforms like Alibaba, DHGate, JD.com, Temu, Shein, and AliExpress.[187] As of February 2024, Shein faced almost 100 cases of copyright infringement in the United States, while sellers on Temu have been accused of copying product photos, descriptions, and even entire Amazon storefronts alongside offering counterfeit products.[188] Counterfeits present significant economic harm to U.S. businesses, costing them over $200 billion annually and resulting in the loss of more than 750,000 U.S. jobs.[189]

Alexandra Berzon, Shane Shifflett, and Justin Scheck, "Amazon Has Ceded Control of Its Site. The Result: Thousands of Banned, Unsafe or Mislabeled Products," *Wall Street Journal*, August 23, 2019.

*China is the largest source of counterfeits not only the for the United States but also globally. An Organisation for Economic Co-operation and Development study that compiled counterfeit seizure data across countries found that China and Hong Kong were the source for the vast majority of counterfeit imported products between 2017 and 2019. Organisation for Economic Co-operation and Development, European Union Intellectual Property Office, "Global Trade in Fakes: A Worrying Threat," June 22, 2021.

†Commonly seized Chinese-made counterfeits include handbags and wallets, clothing and accessories, and watches and jewelry. Together, these three product categories account for 65 percent of all seized lines from China and Hong Kong and 81 percent of total seizure value from these producers. U.S. Customs and Border Protection, *Intellectual Property Rights*, January 19, 2024.

Due to the illicit nature of these goods, counterfeits can present heightened health and safety risks to U.S. consumers.[190] In a study published in 2022, 36 percent of counterfeit apparel items tested by the American Apparel & Footwear Association failed to comply with U.S. product safety standards.*[191] Tested items were found to contain arsenic, lead, phthalates, and other toxic heavy metals known to damage kidneys, bones, respiratory systems, and neurological development.[192] Similarly, in 2018, Chinese counterfeit cosmetics seized from vendors in Los Angeles and Houston were found to contain hazardous materials, including lead, arsenic, and human waste.[193] These dangerous counterfeit cosmetics were labeled as reputable U.S. brands, potentially misleading purchasers into believing they were receiving authentic and safe products.[194]

Counterfeits pose a more acute challenge for technical components that may be hidden from U.S. consumers' view, such as auto parts. In March 2023, CBP seized nearly $200,000 in counterfeit auto parts shipped from China, including features vital to safely operating airbag covers, front fenders, and bumpers.[195] Counterfeit materials have also been discovered in commercial jets. In one instance uncovered in 2023, the certificates verifying the origin of titanium used to manufacture airplane fuselages were found to have been forged by a supplier in China.[196] In total, CBP seized counterfeit automotive and aerospace products worth $7.6 million in 2023, with $5.2 million and $2.2 million of this originating in China and Hong Kong, respectively.[197] The National Crime Prevention Council estimates that over 350,000 serious injuries and 70 deaths occur every year due to counterfeit products.[198]

China is a prominent source of counterfeit medications, and U.S. households additionally face direct risks to their health from unsafe pharmaceuticals from China. In FY 2023, CBP seized $86.6 million in counterfeit medications and personal care products that originated in China and Hong Kong, accounting for 47 percent of the total.[199] According to the Organisation for Economic Co-operation and Development (OECD), China is the world's second-largest source of fake pharmaceuticals ranging from antibiotics to cancer treatments.†[200] China's growing position in the biopharmaceutical industry may enable Chinese counterfeiters to more easily replicate advanced drug discoveries, undercutting IP owners and posing health risks to U.S. households. (For more on China's position in biopharmaceutical supply chains, see Chapter 3, "U.S.-China Competition in Emerging Technologies.") For example, in December 2023, the U.S. Food and Drug Administration (FDA) warned of fake Ozempic, a diabetes drug used to treat obesity, entering the United States after seizing a shipment of counterfeit products.[201] Though the FDA has not announced the origin of the fake drugs, an investigative report by *Vanity Fair* identified a shipment of 10,000 units of fake Ozempic sent by air mail to the United States from China.[202]

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*The American Apparel & Footwear Association tested 47 counterfeit items of clothing, footwear, and other accessories and found that 17 products failed safety standards. American Apparel & Footwear Association, "Fashion Industry Study Reveals Dangerous Chemicals, Heavy Metals in Counterfeit Products," March 23, 2022.

†India was the source of 53 percent of all seized counterfeit drugs by value worldwide, according to the OECD's dataset of global IPR seizures. Organisation for Economic Co-operation and Development, EU Intellectual Property Office, "Mapping the Scale of the Fake Pharmaceutical Challenge," in *Trade in Counterfeit Pharmaceutical Products*, March 23, 2020, 33

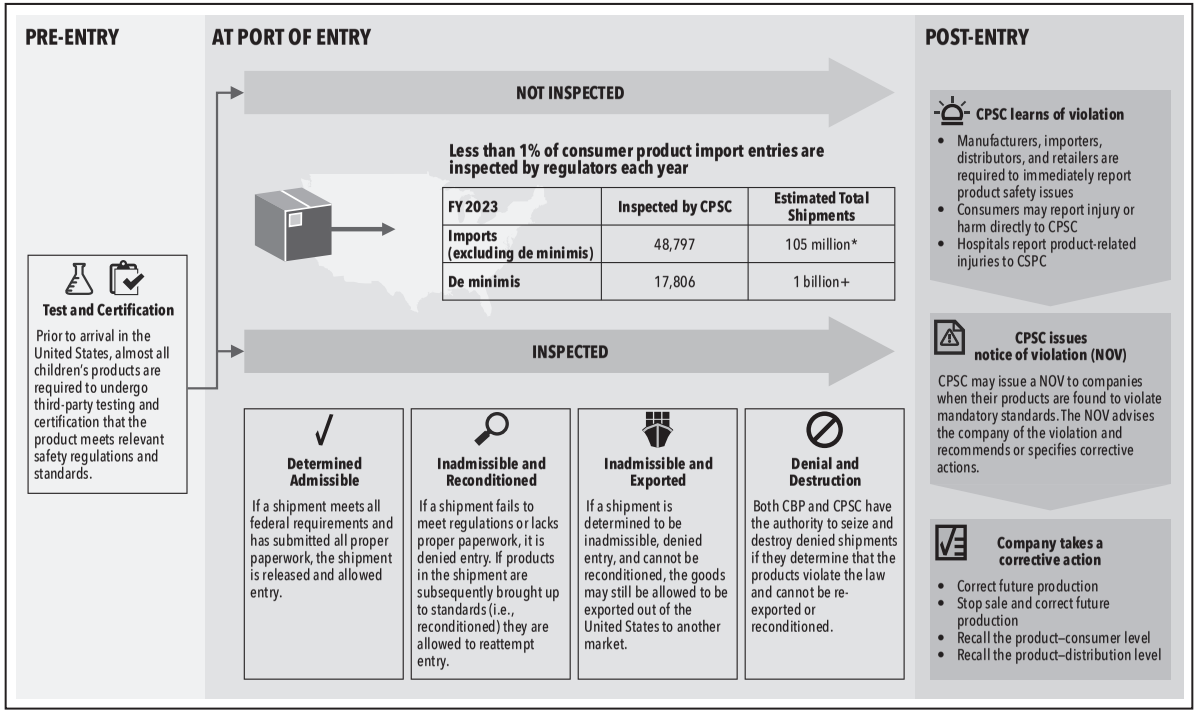
Challenges Encountered by U.S. Regulators with Imports from China

The Volume of Imports from China Burdens Regulators and Increases Consumer Risks

U.S. regulators are overwhelmed by the volume of imports from China and a lack of time and capacity required to properly inspect goods entering the United States. This allows large numbers of potentially unsafe or illicit goods to enter the U.S. market daily. In FY 2022, CBP processed $3.35 trillion in imports, including more than 33.4 million imported cargo containers at U.S. ports, not including de minimis entries.[203] According to CBP's annual *Trade and Travel Report* for FY 2022, a physical inspection of a cargo container takes 120 minutes on average, while a technology-aided nonintrusive inspection takes eight minutes.[204] Challenges with inspection times are further compounded by a shortage of staff, particularly for consumer products. There are currently 328 ports of entry located throughout the United States.[205] CPSC has 520 employees, including 120 investigators and compliance officers located at 23 ports with the highest volumes of consumer product imports as of March 2022.[206] In testimony before the Commission, Jim Joholske, director of the Office of Import Compliance for CPSC, noted that the agency had "fewer than 50 investigators stationed at some of the largest ports in the country" and further assessed that "the sheer volume of imports from China remains overwhelming and difficult to monitor."[207] Given its staffing and resource capacity, CPSC seeks to position its personnel to maximize the percentage of potentially unsafe products it screens, including by deploying additional resources to express courier facilities and international mail facilities.[208] (For an overview of U.S. consumer product safety enforcement throughout the import process, see Figure 5.)

Chinese e-commerce platforms' ability to take advantage of the de minimis threshold also poses significant challenges to U.S. import regulators. According to the latest available data published by CBP, de minimis imports from China increased from 300 million packages in FY 2018 to nearly 450 million in FY 2021—equal to 58 percent of the United States' total de minimis imports that year.[209] According to the U.S. International Trade Commission, 83 percent of total U.S. e-commerce imports benefited from this exclusion in FY 2022.[210] Limited staff resources across U.S. regulators and insufficient shipment data (see textbox below) mean the vast majority of these packages are not inspected for compliance with U.S. regulations. De minimis shipments often arrive in the United States via express couriers, consignment, and international mail.[211] In the first three quarters of FY 2024, an average of nearly four million de minimis shipments arrived in the United States each day from all countries.[212] According to CBP, in 2022, 80 percent of all IPR-related shipment seizures arriving from China entered the United States through international mail and express consignment, the same channels used for shipping small e-commerce packages directly to consumers.[213] In addition, research suggests e-commerce exporters are exploiting gaps in regulatory coverage for de minimis shipments to bypass inspections. In a 2019 report, CPSC stated that

Figure 5: Points of Inspection in Manufacturing and Import Cycle for Children's Products



Source: Various.[214]

*In 2023, the number of individual import line items to the United States was 105 million. This refers to the number of separate product lines entering the United States through normal customs channels. U.S. Census Bureau, *USA Trade Online*.

"some industry stakeholders indicated that due to the small size of their shipments, de minimis e-commerce sellers can disperse the risk of having their products interdicted by various border management agencies by sending multiple shipments to different ports."[215]

Limited Data on De Minimis Shipments and Ongoing Data Pilots

The United States collects only limited data on de minimis shipments,* posing challenges to identifying unsafe or illegal imports. Unlike shipments entering through normal customs channels, CBP does not require de minimis entries to declare the HTS code for the shipments' contents, which is used for a variety of purposes, including assessing import duties and preparing U.S. trade statistics. Instead, these importers can provide a "specific" description of the product, but often these are vague, inaccurate, and difficult for regulators to process. CBP's regulations also only require de minimis importers to provide information on the shipper, which is frequently the entity arranging the shipment rather than the manufacturer of the product.†[216]

These data gaps compromise the enforcement of U.S. regulations and laws. For instance, the lack of HTS data inhibits CPSC from screening for products subject to high standards, like children's products, and inadequate data on the manufacturer prevents targeting imports based on risk factors such as past violations. As Mr. Joholske testified, "Without the same data as we have on higher value shipments, CPSC cannot utilize its risk assessment methodology to know what should be targeted for inspection."[217] These issues pose challenges to the enforcement of other laws, including the Uyghur Forced Labor Prevention Act.[218]

To mitigate these issues, CBP has initiated data pilots to begin collecting additional information on de minimis imports, but participation in these programs remains voluntary. In July 2019, CBP launched its Section 321 Data Pilot, through which approved carriers, brokers, freight forwarders, and online marketplaces could submit additional data on de minimis shipments in advance to CBP, including data elements not traditionally collected like product images and URL links.[219] CBP has extended this pilot to run through August 2025.[220] In August 2019, CBP began the Entry Type 86 test, which enabled de minimis importers to file entry releases electronically through the Automated Commercial Environment—CBP's online trade processing portal.[221] Entry Type 86 is intended to provide CBP and other government agencies greater visibility into de minimis imports, asking filers to submit the shipment's ten-digit HTS codes, among other expanded data elements. This test currently has no sunset date. In its September

*CBP's regulations require the following data fields for a shipment to be released under de minimis: "(1) Country of origin of the merchandise; (2) Shipper name, address and country; (3) Ultimate consignee name and address; (4) Specific description of the merchandise; (5) Quantity; (6) Shipping weight; and (7) Value." U.S. Customs and Border Protection, "Form of Entry," 19 CFR 143.23(k).

†In contrast, importers that file for formal entries are required to provide a "Manufacturing ID," which is a unique code for the manufacturer or entity initiating the shipment. Fariha Kamal, C.J. Krizan, and Ryan Monarch, "Identifying Foreign Suppliers in U.S. Merchandise Import Transactions," *Federal Reserve International Finance Discussion Papers*, August 2015, 4–5.

Limited Data on De Minimis Shipments and Ongoing Data Pilots—*Continued*

13, 2024 announcement on its intent to propose rulemaking on the de minimis exemption, the Administration indicated it would require additional data elements on de minimis shipments, including HTS codes.[222] In FY 2023, CBP received filings on 785.7 million de minimis shipments through these two programs out of a total of over one billion de minimis entries.[223]

Evasion of Regulations and Fraudulent Certification

In most cases, a permit or advanced inspection is not needed to import goods into the United States; in the limited set of cases where advanced testing and certification is required, these efforts are subject to abuse and evasion by Chinese manufacturers.[224] Federal law requires importers to verify some consumer products' compliance with safety regulations through testing, including all-terrain vehicles, mattresses, bicycle helmets, and almost all children's products.[225] Producers of these regulated goods must provide documentation of successful testing to retailers, distributors, and—upon request—the government (for more on the approval process for third-party testing laboratories, see textbox below).[226] However, only producers of children's products are required to use CPSC-approved third-party labs; other products can be tested in-house or by other qualified labs and test facilities that do not require CPSC accreditation.[227]

Products regulated by other agencies require testing as well. The U.S. Department of Transportation regulates the shipping of lithium-ion batteries, and New York City recently started requiring batteries to certify via labeling that they meet testing requirements.[228] However, these certifications can be forged, resulting in significant consequences for U.S. consumers. A 2023 investigation by CBS New York found fake certification stickers for lithium-ion batteries for sale on a Chinese e-commerce marketplace following an e-bike fire in New York City.[229] The New York City Fire Department stated that lithium-ion batteries had been linked to more than 200 fires and 17 deaths in New York City between January and November 2023.*[230]

Issues have arisen with other types of third-party testing as well. The FDA requires producers of medical devices to submit testing data on device performance, which is part of a safety review process that may also include mandatory onsite inspections by the FDA.[231] In February 2024, the FDA issued a reminder for medical device manufacturers to independently verify third-party-generated data after the agency "identified an increase in submissions containing unreliable data generated by third-party test labs, including from numerous such facilities based in China and India."[232] The FDA encouraged manufacturers to contract testing to accredited labs under the Accreditation Scheme for Conformity Assessment program,

*The unnamed Chinese marketplace removed the counterfeit stickers after being notified by CBS New York. CBS New York Team, Walter Smith Randolph, and Tim McNicholas, "Online Marketplace Removes Fake UL Labels after CBS New York Investigation," November 17, 2023.

which is not currently required when testing medical devices.[233] The agency further noted, "When such data are submitted to the FDA, the agency is unable to rely on them to grant marketing authorization and it calls into question the data integrity of the entire file."[234]

Third-Party Conformity Bodies

In the United States, third-party conformity assessment bodies must be accredited by a signatory member to the International Laboratory Accreditation Cooperation-Mutual Recognition Arrangement (ILAC-MRA), an international framework that aims to standardize testing standards and allow the cross-border recognition of labs accredited by a foreign accreditation body.*[235] Third-party testers are also subject to periodic audits at least every two years.[236] These audits consist of a reassessment of the lab's management and technical requirements by the lab's accreditation body and an examination of this documentation by CPSC.[237] As of October 2024, 292 out of a total of 677 third-party testing laboratories approved by CSPC were located in China, and almost all were accredited by the China National Accreditation Service for Conformity Assessment.[238] The majority of accepted Chinese testing labs are independently owned, but some are also partially owned by manufacturers, private labelers, or government entities.[239]

In some cases, U.S. regulators may conduct advanced inspections of foreign manufacturers to ensure quality production, but these efforts are sometimes undermined by a lack of capacity. While the FDA is required to conduct mandatory in-country inspections of overseas facilities for drugs, medical devices, biological materials, and food products, it announced in March 2020 that it would stop routine inspections of overseas and domestic producers because of the COVID-19 pandemic.[240] Due to staffing shortages and exacerbated by a backlog in the wake of the pandemic, the agency has since struggled to resume regular inspections, leading to increased risks to U.S. consumers.[241] Following a series of deaths from bacteria-tainted eyedrops,† a ProPublica analysis of FDA data revealed that the agency inspected only 6 percent of the approximately 2,800 foreign manufacturing facilities where drugs and their ingredients were produced in 2022.‡[242] Even in cases where the FDA is able to inspect foreign manufacturers, there are significant questions

*To be accepted by CPSC, labs must be independently accredited to ISO/IEC 17025—General Requirements for the Competence of Testing and Calibration Laboratories by a member of the ILAC-MRA. Applicants must also detail the scope of tests related to children's product safety that they intend to offer. The submission is then reviewed by CPSC upon initial acceptance and then audited at least every two years going forward. U.S. Consumer Product Safety Commission, *CPSC-Accepted Laboratories Frequently Asked Questions*; U.S. Consumer Product Safety Commission, *CPSC Form 223—Lab Accreditation*; U.S. Consumer Product Safety Commission, "Requirements Pertaining to Third Party Conformity Assessment Bodies," *Federal Register* 77: 31084 (May 24, 2012).

†The eyedrops were produced by the India-based firm Global Pharma Healthcare. U.S. Food and Drug Administration, *Warning Letter: Global Pharma Healthcare Private Limited*, October 20, 2023.

‡By comparison, in 2019 the FDA inspected 37 percent of the approximately 2,500 overseas manufacturers. Irena Hwang, "After Pandemic Delays, FDA Still Struggling to Inspect Foreign Drug Manufacturers," *ProPublica*, April 19, 2023.

regarding the reliability of the information gathered. In February 2024, the GAO released a report in which it concluded that the FDA faces continued issues in overseeing foreign drug manufacturers due to persistent staff vacancies, including in the FDA's China office.[243] Of particular concern, the report noted that the FDA's practice of announcing visits up to 12 weeks in advance, as is typically required by foreign governments, and reliance on translators provided by the foreign establishment being inspected "can raise questions about the accuracy of information FDA investigators collect."[244]

Inefficient and Ineffective Recalls

If unsafe products are not stopped at the border, federal agencies can issue recalls to remove them from the market, but the recall process can be long, ineffective, and inefficient, particularly when dealing with China-based manufacturers. Most recalls are voluntary and issued as the result of negotiations between CPSC and the retailer or manufacturer.*[245] CPSC cannot unilaterally recall a product without legal action.[246] If a company does not agree to a voluntary recall, CPSC must pursue a mandatory recall through an administrative adjudicatory process or by filing a federal court action.[247] However, since U.S. regulators cannot exercise jurisdiction over foreign firms to impose financial consequences, CPSC faces significant challenges in getting China-based and other foreign firms to comply with U.S. regulations.[248] These firms can ignore communications from CPSC and refuse to participate in the voluntary recall process, forcing CPSC to either initiate legal proceedings or else to leave the product unrecalled.[249] In testimony for the Commission, Mr. Joholske asserted that "CPSC has little ability to act against third-party sellers who are small manufacturers based overseas. Products including baby mattresses, lithium ion batteries, magnets, baby loungers, and more are left unrecalled because the manufacturer cannot be held responsible."[250]

In cases where firms do not cooperate, CPSC can issue a unilateral safety warning to alert the public of a product's risks.[251] The number of these warnings has increased in the past four years, largely in response to unsafe goods sold via e-commerce by Chinese and other foreign manufacturers.†[252] (For more on the role of e-commerce marketplaces in U.S. consumer product safety enforcment, see textbox below.) Alongside e-commerce shipments, the number of unilateral warnings issued by CPSC increased from three in 2020 to 38 in 2023.‡[253] In remarks given at a seminar in 2024, CPSC Chair Alexander D. Hoehn-Saric stated, "Once a rare occurrence, these unilateral warnings are now an important part of our toolbox,

*The negotiation process between CPSC and a firm can be lengthy, taking between a few months and a few years. Teresa Murray, "Safe at Home 2024," *U.S. PIRG Education Fund*, March 2024, 6.

†CPSC cannot issue a recall for counterfeit products, since it does not regulate illegal goods. This inability to systematically remove unsafe counterfeits leaves large swaths of potentially dangerous and unregulated consumer goods from China on the market for use by U.S. consumers. Teresa Murray, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on Consumer Products from China: Safety, Regulations, and Supply Chains*, March 1, 2024, 5; U.S. Customs and Border Protection, *IPR Seizures by Trading Partner*, February 10, 2024.

‡CPSC issued only two unilateral warnings in the nine-year period spanning 2011 to 2019. Matthew Cohen, "CPSC Enforcement Trend: Unilateral Press Releases," *Crowell*, October 13, 2022.

especially for products sold by foreign manufacturers on e-commerce websites."[254] These warnings primarily target goods made in China. According to data compiled by the U.S. Public Interest Research Group's Education Fund, of the 38 warnings issued by CPSC in 2023, at least 20 of the products were manufactured in China.[255] Most were sold via e-commerce platforms, with four products being sold on Temu exclusively.*[256] As an example, CPSC issued a public warning to stop using baby loungers sold on several e-commerce websites by the Chinese seller Poetint002 due to suffocation risk, fall hazard, and failure to comply with federal regulations for infant sleep products.[257] Although CPSC notified Poetint002 that its product violated the law, "the firm has not agreed to recall these loungers or offer a remedy to consumers."[258] Thousands of visually similar baby lounger products are still available on e-commerce platforms from other sellers.

In cases where companies comply with CPSC requests and an agreement for a voluntary recall is reached, low recall correction rates stymie efforts to remove unsafe products from the market. Examination of monthly progress reports on the status of recalled items suggests that in most cases, recalls have little success in removing unsafe goods from the U.S. market regardless of where the product was manufactured. Among the 27 product recalls issued before August 1, 2022, that CPSC has provided data on, 19 of the products had a correction rate of below 50 percent.[259] Among products recalled after August 1, 2022, with data available, only 27 out of the 162 recalled products had a correction rate of 50 percent or greater.[260]

Even if a recall is issued and is initially successful, many recalled products continue to enter and circulate within the United States via online retail sales, often involving Chinese producers. In 2007, the Federal Government banned the sale of flat pool drain covers due to numerous drowning and evisceration deaths that were caused when people—primarily young children—became suctioned to the drain at the bottom of a pool.†[261] Despite this ban, Chinese sellers continue to offer flat pool drain covers directly to U.S. consumers through online marketplaces.[262] Since September 2022, CPSC issued seven recalls on nearly identical drain covers that were in violation of the federal safety standard.[263] By the time the violations were detected, about 7,300 drains had been sold.[264] In all seven instances, the drains were made in China and were being sold by Chinese companies directly to U.S. consumers through Amazon.[265] These recent recalls do not appear to have solved the issue. Using an image of the drain cover from one CPSC recall alert in Google's image search produced a listing for an identical-looking drain for sale on Amazon

*Six warnings were for products sold exclusively on Amazon and one was for a product sold exclusively on Walmart.com. Teresa Murray, "The CPSC's Public Warnings for 2023 and by Year, 2020–2023," in *Safe at Home in 2024*, U.S. PIRG Education Fund, March 2024, 26.

†In a 2019 report, CPSC stated that the agency was aware of 11 instances of circulation entrapments associated with pools, spas, and whirlpool bathtubs between 2014 and 2018. Of those 11 instances, two resulted in death. Although sobering, these statistics are lower than earlier figures. From 1999 to 2008, CPSC reported 83 instances, with 11 reported deaths. U.S. Consumer Product Safety Commission, *2014–2018 Reported Circulation/Suction Entrapment Incidents Associated with Pools, Spas, and Whirlpool Bathtubs, 2019 Report*, May 2019; U.S. Consumer Product Safety Commission, *1999–2008 Reported Circulation/Suction Entrapment Incidents Associated with Pools, Spas, and Whirlpool Bathtubs, 2009 Memorandum*, May 14, 2009.

between April and June 2024.*[266] Although not listed on the U.S. version of the site, information provided by Amazon Mexico's webpage indicates the drain was made in China and sold by a Chinese vendor.[267]

E-Commerce Marketplaces' Role in Product Safety

As commerce has shifted online, CPSC faces new challenges in upholding product safety rules. Traditionally, physical stores have played a key role as sellers in ensuring the safety of consumer products. Manufacturers, distributors, and retailers may face civil liability† and regulatory consequences for harms caused to consumers as part of the consumer product supply chain.[268] CPSC develops standards for firms involved in the supply chain for consumer products, including retailers in physical stores, and has the power to ban unsafe products.[269] Retailers are expected to obtain and review certificates of compliance as mandated by CPSC from manufacturers and importers.[270] Retailers must report harmful products to CPSC immediately, ensure the products are no longer sold in their stores, and, in some cases, notify affected customers.[271] Regulators have the legal right to enter and inspect the premises of a seller of consumer goods, which gives them a way to monitor and enforce these regulations.[272] The same laws that apply to brick-and-mortar stores also apply to retailers, distributors, and manufacturers of products sold online.[273] However, e-commerce marketplaces have traditionally argued that they do not qualify as "retailers" or "distributors" under applicable law and instead cite the fact that they only facilitate purchases between third-party sellers and buyers without taking legal ownership of the product at any point.‡[274]

E-commerce marketplaces may be incentivized to provide additional consumer protections as a way to compete with other platforms.[275] Select e-commerce marketplaces have policies in place to remove recalled products from their websites.[276] Critics ques-

*Commission staff reported this listing to Amazon three times for a potential violation of U.S. safety standards, most recently on June 11, 2024. The listing had been removed by August 2024. On October 3, 2024, CPSC issued an NOV to the seller, but the firm has not agreed to conduct a recall. For a comparison of the drain sold online and the recalled product, see Appendix III, "Comparison of Drain Cover for Sale on Amazon as of June 11, 2024, and Recalled Drain Cover Linked to Evisceration and Drowning Deaths." U.S. Consumer Product Safety Commission, *CPSC Warns Consumers to Immediately Stop Using Maxmartt Pool Drain Covers Due to Entrapment Hazard; Violations of the Virginia Graeme Baker Pool and Spa Safety Act; Sold on Amazon.com*, October 3, 2024; Amazon, "Maxmartt Pool Floor Main Drain 2 Inch White Main Drain Water Inlet Draining Accessory Vinyl Pool Main Drain Liner for Swimming Pool," June 11, 2024. *https://web.archive.org/web/20240611144909/https://www.amazon.com/Maxmartt-White-Swimming-Draining-Accessory/dp/B083728PP2*.

†Civil liability has played an outsized role in holding firms accountable because consumers harmed by unsafe products can sue them to recover damages. In May 1997, the non-binding but influential Restatement (Third) of Product Liability Law stated the typical legal approach that a person injured by a defective product may sue the manufacturer and members of the chain of distribution. The degree to which retailers are civilly liable, and the legal standard required to prove harm, differ by state. Becca Trate, "From Cart to Claim: Addressing Product Liability in Online Marketplaces," *Information Technology and Innovation Foundation*, June 24, 2024, 3–4; American Law Institute, "Restatement of the Law Third, Torts: Products Liability," 1998.

‡Under the Consumer Product Safety Act, the term "distributor" means "a person to whom a consumer product is delivered or sold for purposes of distribution in commerce, except that such term does not include a manufacturer or retailer of such product." The term "third-party logistics provider" means a person who solely receives, holds, or otherwise transports a consumer product in the ordinary course of business but who does not take title to the product. U.S. Consumer Product Safety Commission, *Product Safety and Compliance: Best Practices for Buyers Exporting Consumer Goods to the United States*, September 2021.

E-Commerce Marketplaces' Role in Product Safety—*Continued*

tion these policies, however, pointing to numerous instances of recalled products available for purchase on e-commerce marketplaces.[277] E-commerce marketplaces may enforce additional standards, like requiring sellers of children's products in the United States to upload certificates of compliance.[278] While individual sellers have been liable for products sold on marketplaces, liability for the marketplaces themselves in transactions involving separate sellers has generally been limited.[279] The high volume of sellers with almost identical products, combined with the fact that many are overseas beyond the reach of U.S. law enforcement, makes the rules far more difficult to administer.

In July 2024, CPSC determined that Amazon was acting as a distributor for products sold under the Fulfillment by Amazon (FBA) program.[280] Such a determination would make Amazon responsible for the safety of a large portion of goods sold on the platform by giving CPSC the ability to force Amazon to recall or ban unsafe products.[281] Under the FBA program, Amazon is responsible for hosting the product listing on its site, handling payment, warehousing, packaging and shipping, returns, and customer service.[282] CPSC initiated the complaint against Amazon in 2021 for failing to provide adequate notification and support to customers after it facilitated the sale through FBA of over 400,000 units of "hazardous" products, including "children's sleepwear that fail to meet flammability requirements, carbon monoxide detectors that fail to alarm, and hair dryers that lack electrocution protection."[283] Amazon argued that it was merely acting as a "third-party logistics provider," which would have shielded it from liability.[284] The CPSC ruling reasoned that even though Amazon was not the legal owner of the goods, the role Amazon played in facilitating the purchase went above and beyond that of a logistics provider.[285] Unless the CPSC ruling is overturned, Amazon will be required to update its procedures for notifying buyers about product hazards and to provide refunds or replacements for the products.[286]

The implications of the ruling are still to be determined. The ruling only applies to products sold on Amazon through FBA. The ruling is also specific to Amazon and does not cover other popular e-commerce marketplaces like eBay, Wayfair, Etsy, Shein, or Temu.[287] Different business models like Shein and Temu that facilitate direct shipments from product manufacturers to the final consumer may not share enough characteristics of FBA for a similar argument to apply.[288] Perversely, this could encourage e-commerce marketplaces to move toward the model of allowing international warehouses or manufacturers to ship directly to the consumer to avoid liability under programs similar to FBA.[289] Amazon plans to start a similar service geared toward Chinese sellers in efforts to compete with Shein and Temu.[290] Finally, the decision gives CPSC the power to enforce its regulations against Amazon but leaves unresolved the applicability of direct civil liability for harm to U.S. consumers.[291]

Case Study: The Safety Risks and Health Hazards of Low-Quality Toys from China

Children's toys available for purchase in the United States are overwhelmingly sourced from China, giving China-based manufacturers an outsized role in ensuring the safety of products available to young U.S. consumers. According to data provided by the U.S. Census Bureau, China is the number one source of imported children's toys to the United States, accounting for three-quarters of all toy imports in 2023.*[292] Given the country's substantial role as a source of imports, China-based manufacturers also play a significant role in ensuring that toys are produced up to U.S. safety standards. Children's products and toys are among the most heavily regulated goods in the U.S. market. All toys sold in the United States and intended for use by children age 12 and under must be tested by a third-party, CPSC-approved laboratory for compliance with applicable federal safety requirements.[293] Upon successful completion of testing, the manufacturer or importer will issue a Children's Product Certificate† verifying a product's compliance with regulations based on the lab results.[294] Although there may be additional requirements for some toys, most are subject to standards prescribed by the *Standard Consumer Safety Specification for Toy Safety* as specified by the international standards-setting organization ASTM.[295] These standards cover provisions for toys' material quality, flammability, toxicology, and stability and overload requirements, among other features.[296] Critically, U.S. consumers cannot externally observe many of these safety features, leaving them to depend on manufacturers, importers, and retailers to appropriately vet the quality of the products they sell.

Despite these extensive regulations, toys made in China continue to present elevated health and safety risks to U.S. children. A review of CPSC toy recalls issued from 2019 to 2023 reveals that 85 percent were for products made in China.‡[297] Of the 16 lead- and phthalate-related recalls conducted in the past five years, all but one were for products made in China.[298] Even in cases where a finished toy was not imported from China, toy components manufactured in China still present safety concerns. In May 2023, a small U.S. bike manufacturer issued a recall for an electric bike with a built-in seat for young children.[299] Although the bike was designed

*Part of the decline may be due to some toy sales shifting to cross-border e-commerce channels that utilize the de minimis exemption, for which the United States collects insufficient data.

†The Children's Product Certificate must be furnished to CPSC upon request and currently can be furnished electronically or physically. In practice, many importers and manufacturers email the certificate to CPSC when requested. A new proposal by CPSC would change this process to a mandatory e-filing system for foreign manufacturers when the product is imported. In a past study, CPSC found that shipments accompanied by a certificate, or where a certificate was provided within 24 hours of request, are significantly less likely to violate safety rules than products for which it took longer than 24 hours to provide the certificate or where no certificate was ever provided, even after CSPC requested one. No shipments, including de minimis, would be exempt from the e-filing requirement. CSPC anticipates that requiring e-filing of certificates will improve its risk assessment methodology and ability to target high-risk shipments for inspection. On September 13, 2024, the Administration announced that CPSC intends to issue a final rule to enact these changes. Sheila A. Millar and Antonia Stamenova-Dancheva, "CPSC Proposes Significant Changes to Rule Governing Certificates of Compliance," *National Law Review*, January 4, 2024; U.S. Consumer Product Safety Commission, *eFiling Certificate of Compliance Study Assessment*, August 28, 2018.

‡Of 87 toy recalls, 74 were related to products manufactured in China. U.S. Consumer Product Safety Commission, *Recalls*.

and assembled by the small business, the firm used yellow-painted wood panels from China containing levels of lead that exceeded federal standards.[300]

Toy safety concerns have been exacerbated by the rise of China-based e-commerce sellers and Chinese e-commerce websites, which often sell recalled toys or other children's products with known safety issues. The continued production and resale of magnetic ball sets provides an example of how online sales undermine consumer safety. Magnetic ball sets consist of numerous small, round, powerful magnets that can be pulled apart or reconnected to form different shapes. Often sold as a children's toy, these sets pose serious health and safety risks if ingested, as the small magnets may connect while inside a person's body, potentially resulting in serious injury or even death.[301] More than 2,000 emergency room visits and at least seven deaths have been linked to these products between 2017 and 2021.[302] CPSC issued a warning in 2007 and then again in 2011 after the agency received more than 200 reports of children swallowing magnets, with at least 18 of those cases resulting in emergency surgery.[303] Between 2012 and 2014, CPSC issued six recalls for magnetic ball sets due to injury hazard; the agency then issued at least another five between December 2023 and March 2024, with most of the products being made in and offered online by China-based sellers.[304] In addition to these recalls, CPSC has issued at least 21 notices of violation for magnet sets.[305] In every case, the sets were sold online, and in 17 of the 21 instances, CPSC identified the responsible company as based in China.[306] Despite these well-known and documented risks, magnet sets that do not comply with federal safety standards continue to be sold into the U.S. market via e-commerce platforms by China-based sellers.

Counterfeit toys from China present acute risks for U.S. consumers, since manufacturers of these products are unlikely to submit their fraudulent goods to the extensive testing and certification required by the Federal Government. Of the 165 toy-related counterfeit shipment seizures conducted by CBP in FY 2022, 133 seizures were from China or Hong Kong.*[307] In FY 2023, over half of seized Chinese and Hong Kong counterfeit toy shipments were found entering the United States through express consignment or mail, venues commonly used for e-commerce imports.[308] Although information on the product safety of these recent seizures is not available, past experience suggests these products likely posed significant risks. In 2019, CBP and several other federal agencies and international partners executed Operation Holiday Hoax, a sting operation to prevent counterfeit goods from entering the United States and other markets.[309] After searching a shipment from China, the joint team recovered 155,000 units of suspected counterfeit toys, later found to contain lead.[310] Counterfeits may pose other hazards as well, such as inappropriate age-labeling, which may mislead consumers into purchasing a toy that carries an added but unidentified risk for younger children.[311]

*CBP reported the total value of all toy-related seizures to equal $7.2 million. Of that total, counterfeits from China and Hong Kong accounted for $6.3 million in value, or 87 percent. U.S. Customs and Border Protection, *IPR Seizures by Trading Partner*, October 21, 2023.

Experiences in Quality Sourcing from China: Lovevery's Process

Ensuring safe manufacturing in China is possible, and many U.S. producers and retailers are able to source quality goods from China by implementing a rigorous review process. Lovevery, an educational play products and toy company headquartered in Boise, Idaho, is one example of a U.S. producer that is able to effectively source from China by implementing a quality and safety inspection process. A key feature of this process is testing conducted by multiple unrelated parties at several stages of manufacturing. This distribution of responsibility creates an informal check system that holds all production partners accountable for their contribution.

- *Partner expectations and testing:* Lovevery sets testing and safety requirements both for its product manufacturers as well as the suppliers that provide inputs for finished goods. This includes testing for chemical hazards at the supplier level prior to shipping materials to the manufacturer.[312] Suppliers are also expected to inspect and sometimes test components and raw materials that enter the factory before they are used in final assembly.[313] Once production begins, Lovevery implements in-process testing for items that are critical to either the quality or safety of the product, providing a second layer of review conducted by the manufacturer.[314]
- *Contracted audits:* In addition to obtaining required product certifications from CPSC-approved labs, Lovevery works with contractors to audit China-based factories. These external audits ensure raw materials are compliant with standards and that nothing is introduced during manufacturing that may compromise the product's quality or safety.[315] These audits allow U.S.-based producers like Lovevery to review the quality of checks performed by manufacturers and suppliers.

This inspection process reduces the likelihood of an unsafe product reaching the U.S. market, but it comes at a considerable cost to U.S. firms—costs not incurred by those China-based manufacturers that sell online directly to U.S. consumers with no regard for safety regulations. Bryan Brown, group vice president of safety, quality, and regulatory compliance for Lovevery, notes that although critical to the production process for children's products, "using the right materials, adding extra steps in manufacturing, building in redundancy for things such as small part containment as well as in-process destructive testing drives a higher product cost."[316] These higher costs create opportunity for some unethical China-based manufacturers to undercut competition by simply not following safety procedures or U.S. regulations. In many instances, these China-based manufacturers will imitate or attempt to entirely reproduce goods sold by U.S. companies. Mr. Brown states that "in addition to the obvious issues of intellectual property infringement and unfair competition, these [knockoff or counterfeit] toys are simply not made to the same standard or,

Experiences in Quality Sourcing from China: Lovevery's Process—*Continued*

frankly, to any reasonable standard. They are almost always less expensive and for that reason, consumers likely gravitate to them for the perceived price value."[317] Most often, these cheap and unsafe goods are sold online via third-party e-commerce platforms and enter the United States with limited if any vetting or verification, presenting significant physical risks to U.S. consumers and substantial economic harm to U.S. firms.[318]

Implications for the United States

The rising popularity of online shopping among U.S. consumers, in part due to the COVID-19 pandemic and the increasing use of e-commerce platforms by China-based sellers, present a novel and increasing challenge to the U.S. import regulatory regime. Online shopping platforms have given Chinese manufacturers unprecedented access to the U.S. market, but many of the sellers on these sites are unaware of, unable to, or unwilling to produce up to U.S. regulatory standards. Moreover, since these manufacturers lie outside the jurisdiction of U.S. regulators, courts, and law enforcement, these firms are not held accountable for the unsafe and sometimes deadly goods they sell. This combination of unfettered access and limited consequences allows China-based sellers to disregard critical U.S. safety regulations. This may lead to rising instances of hazardous products entering the United States from China, subjecting unknowing U.S. consumers to a higher likelihood of product-related mishaps, injuries, or even death. In addition, by refusing to follow critical but costly U.S. product safety regulations, unethical Chinese firms receive an unfair competitive edge vis-à-vis law-abiding firms. This discrepancy in ability to enforce regulations may result in significant economic harm to U.S. firms. Chinese state-owned entities such as Sinosure have appeared to protect Chinese producers of harmful or poor-quality products from legal or contractual recourse, underlining how China continues to engage in practices that advantage its domestic firms and are inconsistent at least in spirit with the nondiscrimination obligation central to WTO commitments.

Challenges to enforcement of customs regulations and duties parallel the difficulties of monitoring product safety at the border. As Chinese companies seek continued access to the U.S. market despite rising trade tensions, U.S. customs authorities may struggle to monitor and penalize efforts to evade tariffs and other restrictions on imports. This task may grow more complicated as supply chains continue adjusting to the evolving bilateral relationship between the United States and China. With an increasing share of U.S. imports being sourced outside of China, it may become more difficult to detect instances of illegal transshipment of products from China. As the volume of goods incoming from markets such as Vietnam and Mexico increases, U.S. customs authorities may need to deploy additional resources to ensure that Chinese companies are not seeking to merely reroute made-in-China products around U.S. trade restrictions or engage in other forms of duty evasion. Congress expanded

CBP's power to investigate evasion specifically of AD/CVD orders through the Enforce and Protect Act of 2015, but the agency lacks equivalent authorities to investigate evasion of other duties, such as Section 301 tariffs. With the majority of U.S. imports from China now subject to Section 301 duties, a broader review of CBP's tools and penalties for enforcing U.S. trade policy may be merited given the potential scale of Chinese duty evasion.

Given China's stated policy to support its manufacturing sectors' share in the economy, Chinese manufacturers may increasingly use legitimate channels to remain intertwined with U.S. global value chains. An increasing number of Chinese producers are shifting their factories abroad, where they can produce for the U.S. market and avoid China-specific tariffs. (For more on these supply shifts, see Chapter 1, "U.S.-China Economic and Trade Relations (Year in Review).") In addition, a growing portion of China's manufacturing sector is engaged in producing inputs and components and exporting them for final assembly outside of China. As downstream producers will continue to face challenges in ensuring Chinese imported components comply with safety and regulatory standards, this could create new risk vectors for U.S. businesses and households that are difficult to uncover. U.S. households purchasing products from factories in Mexico, Vietnam, and elsewhere that utilize inputs from China may not be aware of the enhanced safety risk. U.S. agencies will need to continually develop and deploy updated assessment tools and techniques to ensure parts, components, and materials embedded in key U.S. imports do not raise safety or trade law evasion concerns.

Appendix I: United States' Top 15 Trading Partners' De Minimis Thresholds

Trading Partner	De Minimis Threshold	Notes
Mexico	$50	The $50 threshold is for shipments from countries outside of United States-Mexico-Canada Agreement (USMCA). For shipments from Canada and the United States the threshold is $117.
Canada	$15	The $15 threshold is for shipments from outside of USMCA. For shipments from Mexico and the United States, the threshold is $150.
China	$7	
Germany	$155	
Japan	$140	The de minimis threshold varies by harmonized system codes; some imports are dutiable under the $140 de minimis value.
South Korea	$150	The $150 threshold is the general de minimis threshold. For shipments from the United States, the threshold is $200.
United Kingdom	$160	
Taiwan	$60	
Vietnam	$43	
Netherlands	$155	
India	N/A	India does not support a de minimis exemption. All imports are subject to duty and tax.
Italy	$155	
Ireland	$155	
France	$155	
Brazil	$50	Brazil's de minimis exemption applies only to postal shipments to individuals. In June 2024, Brazil introduced a 20 percent tax on e-commerce imports valued under $50.

Note: These data include information on the United States' top 15 trading partners, ordered in terms of total trade based on data provided by the U.S. Census Bureau as of January 2024. This group of trading partners accounts for 75 percent of the United States' total trade. Data on the de minimis thresholds come from the Global Express Association (GEA), which is the U.S. International Trade Administration's suggested source for finding information on de minimis values by trading partner. Reported thresholds are approximations, and U.S. dollar equivalents are based on the exchange rate the day the threshold was entered into the GEA database.

Source: Various.[319]

Appendix II: Authorities for Combating Evasion of U.S. Customs Duties: Antidumping and Countervailing Duties vs. Section 301 and Other Trade Measures

Panel A: Antidumping and Countervailing Duty Enforcement

Tool	Description	Timeline	Recent Enforcement Actions	Enforcement Body
Scope and Circumvention Inquiry	When a product subject to an AD/CVD order is altered or transformed in a minor way and sold as new merchandise, the Commerce Department can conduct an investigation to determine if the product is also subject to the AD/CVD order. This can include minor alterations that take place outside of the dutied country (including in the United States or a third-party country) using inputs subject to an AD/CVD order.	Statutory requirement to issue a final determination within 300 days after initiation.	In 2023, the Commerce Department reached final affirmative determinations in seven circumvention inquiries involving AD/CVD orders on China.[320]	Commerce Department, either self-initiated or on request from an interested party.
Enforce and Protect Act (EAPA)	When an importer attempts to evade paying an AD/CVD duty when importing into the United States (including through misclassification, misvaluation, or transshipment), CBP may investigate if evasion took place and bill the importer for any additional duties due.	Statutory requirement to issue a final determination within 300 days after initiation.	In FY 2022, CBP reached an affirmative determination in 53 EAPA investigations, covering about $100 million in evasion of all AD/CVD orders (including those involving China).[321]	Customs and Border Protection on request from an interested party filing through the e-Allegation portal.

Panel B: Custom Duty Enforcement (Including Section 301 Duties)

Tool	Description	Timeline	Recent Enforcement Actions	Enforcement Body
Traditional Customs Enforcement	The Tariff Act of 1930 authorizes CBP to investigate and issue penalties for evasion of customs duties, including through misclassification, misvaluation, or transshipment. CBP has broad authority to make seizures and enforce any fines on imports.[322] The U.S. Court of International Trade has exclusive jurisdiction on all civil actions initiated by the U.S. government arising out of an import transaction.[323] Enforcement actions under the Tariff Act of 1930 usually result in lower damages than a False Claims Act lawsuit—the latter provides for treble damages—and has a shorter statute of limitations of five years, compared to six under the False Claims Act.[324]	No statutory deadlines.	In FY 2022, CBP collected $19.3 million from penalties and liquidated damages on shipments from all countries.[325]	CBP and U.S. Court of International Trade
Reverse False Claims Act Lawsuit	Under the False Claims Act, a party can be held liable for knowingly providing false statements to the U.S. government. Evasion of tariffs, including through misclassification, misvaluation, or providing false country of origin (i.e., transshipment), may be prosecuted as a "reverse false claim" lawsuit, wherein the defendant is charged with knowingly retaining funds owed to the government.[326] Defendants are liable to three times the damages owed to the government.[327] The False Claims Act has a whistleblower provision, incentivizing private citizens to file a suit on behalf of the government in return for a portion of any settlements or judgments.[328]	It takes on average 3.1 years to complete a False Claims Act customs fraud case.[329]	In 2023, three cases alleging China Section 301 duty evasion under the False Claims Act resulted in settlements of $5.2 million.[330]	Usually prosecuted by the U.S. Department of Justice Civil Division, frequently after a lawsuit is filed by a private whistleblower on behalf of the government, known as a qui tam lawsuit.*

*A qui tam lawsuit allows the private individual who filed the lawsuit to receive a portion of the proceeds if the defendant is found liable. Bryan Lemons, "An Overview of 'Qui Tam' Actions," *Federal Law Enforcement Training Centers*.

Appendix III: Comparison of Drain Cover for Sale on Amazon as of June 11, 2024, and Recalled Drain Cover Linked to Evisceration and Drowning Deaths

Image 1: Drain cover manufactured in China and previously for sale on Amazon by a China-based seller.



Source: Amazon, "Maxmartt Pool Floor Main Drain 2 Inch White Main Drain Water Inlet Draining Accessory Vinyl Pool Main Drain Liner for Swimming Pool." *https://web.archive.org/web/20240517140655/https://www.amazon.com/Maxmartt-White-Swimming-Draining-Accessory/dp/B083728PP2.*

Image 2: Recalled drain cover imported from China and sold on Amazon.



Source: U.S. Consumer Product Safety Commission, *Pool Drain Covers Recalled Due to Violation of the Virginia Graeme Baker Pool and Spa Safety Act and Entrapment Hazard; Imported by Vijayli-US (Recall Alert)*, April 27, 2023.

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PART III

COMPETITION AND CONFLICT

CHAPTER 5: CHINA AND THE MIDDLE EAST

Abstract

The Middle East is a region of strategic importance to China due to its energy resources, location astride key trade routes, and possible receptivity to Chinese efforts to construct an alternative, illiberal world order. As China has deepened its trade and investment interests in the Middle East over the past decade, it has also built a variety of diplomatic partnerships and sought to present itself as a neutral arbiter of regional disputes while expanding its military activity in the region. Chinese engagement with the Middle East is selective and transactional, focused on advancing its own interests; Beijing appears to have little desire to play a significant role in advancing regional security or to meaningfully contribute to a resolution of ongoing disputes, including the recent Israel-Hamas war. Instead, China appears content for the moment to free-ride on the U.S. and allied regional security infrastructure—including, most recently, the defense of maritime shipping from Houthi attacks—while blaming the United States for promoting instability. China also works to undermine U.S. ties with key Middle Eastern partners while supporting adversarial countries like Iran. Chinese strategists likely also assess that the turmoil in the Middle East deflects a portion of U.S. attention and resources away from the Indo-Pacific. In the short run, China benefits from its relationships in the Middle East focused on energy trade and securing infrastructure contracts for its state-owned enterprises. In the long term, Beijing aims to expand market share for renewable energy and high-value exports, gain supporters in its bid for global leadership, and potentially establish new outposts capable of supporting its military for increased power projection. China's involvement in the Middle East thus presents U.S. policymakers with an array of economic, normative, and geopolitical challenges.

Key Findings

- China's engagement with the Middle East has expanded during the tenure of General Secretary of the Chinese Communist Party (CCP) Xi Jinping and is driven partly by deepening strategic rivalry with the United States. In contrast to the Indo-Pacific, where China clearly seeks to displace the United States and consolidate a position as the dominant power, the Middle East is a region Chinese leaders view as a source of intractable security challenges and value primarily for its resources and eco-

nomic potential. While China does not have the willingness and ability to replace the United States as a major contributor to regional security, it is nonetheless eager to instrumentalize the region in its efforts to construct a new, illiberal world order at the United States' expense. China offers the region's autocratic governments a vision of a new regional security architecture under the Global Security Initiative and is deepening its diplomatic relations with U.S. partners and adversaries alike to erode Washington's influence.

- Beijing's reaction to the Israel-Hamas war has illustrated both the limits of its diplomatic influence in the Middle East and its willingness to exploit regional tensions for geopolitical gain. China has played no significant role in the U.S.- and Arab-facilitated negotiations between Israel and Hamas, having lost its credibility as a neutral actor by refusing to directly condemn the terrorist group for the October 7th attacks. It has not contributed to coalition efforts to protect maritime shipping from Houthi attacks, and in contravention of international maritime law and norms it has declined to use its naval ships deployed in the region to respond to distress signals from non-Chinese vessels. Rather, Beijing has sought to appeal to Arab states and burnish its image as the self-declared leader of what it calls the "Global South" by portraying itself as an ardent supporter of Palestinian national liberation and condemning Israel and the United States as oppressors.
- China is the largest trading partner for many countries in the region, with growth in total trade and direct investment between China and the Middle East outpacing that of China with the rest of the world over the past five years. While China benefits from infrastructure contracts and expanding market share for its exports to the region, its principle economic objective remains securing steady flows of energy resources, with between 40 and 50 percent of China's total imported energy coming from the region.
- China and Iran have a similar interest in opposing the U.S.-led rules-based international order, but the relationship is to a large degree one of convenience. Just as it is using Russia's diplomatic isolation to extract favorable terms on energy deals, China is opportunistically leveraging its consumption market to purchase discounted oil from Iran while going to great lengths to avoid the appearance of sanctionable transactions through the use of smaller purchases and shell companies.
- China's military activities in the Middle East advance its economic interests while allowing the People's Liberation Army (PLA) to gain operational experience and lay the foundation for a more robust future military presence.
- China is emerging as a global competitor in niche sectors of the Middle Eastern arms market. China is crucial to the development of the Iranian drone industry. Although the U.S. Department of the Treasury and the Department of Commerce have placed sanctions on a number of Chinese companies, Chinese

actors are crucial to supplying components that enable Iran to build drones, which it sells to Russia and to its Middle Eastern proxies such as the Houthis. China continues to either directly or indirectly provide regional actors with technologies that contravene its voluntary but non-binding commitment to adhere to the Missile Technology Control Regime (MTCR). This includes Chinese state-owned enterprises and non-state actors' continued occasional and covert role in supplying Iran's ballistic missile program.

- The Gulf is emerging as a new arena in U.S.-China technology competition, with concerns that close ties between sanctioned Chinese entities and technology firms in the region may be facilitating transfer of leading-edge technology subject to U.S. export controls. Countries and companies in the Gulf may be compelled to choose between technology infrastructure and partnerships with China's tech ecosystem or those with the United States and its allies. Increased deployment of Chinese-made surveillance technology is also a point of concern given its potential to enhance suppression tactics commonly used by authoritarian governments.

Recommendations

The Commission recommends:

- Congress direct the Office of the Director of National Intelligence to produce and provide to the U.S. Department of the Treasury within six months a detailed study of Chinese purchases of Iranian oil over the span of the last five years. The study shall include analysis of China's use of transshipment points and shell companies as methods to insulate itself from sanctions. Congress should further direct that within six months of receipt of the study, the Treasury Department must make a determination if sanctionable activity is occurring and report its findings to Congress.
- Congress direct the U.S. member on the International Maritime Organization (IMO) Council to use their voice and vote to require China to abide by its treaty obligations under the IMO conventions, including by upholding safety regulations on the use of Automatic Identification System transponders.

Introduction

In March 2023, media reporting claimed that China had successfully brokered an agreement between Iran and Saudi Arabia to restore diplomatic relations, ending a seven-year dispute between bitter rivals and fueling speculation that Beijing could someday replace the United States as chief peacemaker and predominant power in the Middle East.[1] Chinese officials were quick to hail their role in the talks, portraying the deal as a model for resolving "hotspot issues" and a major victory for General Secretary Xi's Global Security Initiative.[2] The events set in motion by Hamas's attack on Israel in October 2023 shattered this narrative, however, revealing China's unwillingness to involve itself in a high-stakes regional crisis or bear the costs of contributing to security for the wider region.

This chapter evaluates the nature and extent of China's engagement with Middle Eastern countries.* It first examines China's objectives toward and views of the region before surveying China's engagement with Middle Eastern partners in the diplomatic, economic, technology, and military realms. It concludes with implications for the United States. This chapter draws on the Commission's April 2024 hearing on "China and the Middle East," consultations with experts, and open source research and analysis.

China's Diplomatic Activities in the Middle East: Wide, Varied, and Designed to Enhance Beijing's Influence

China's economic engagement with the Middle East region has been growing since the opening-up and reform era of the late 1970s, but the diplomatic and security aspects of its engagement have deepened significantly over the past decade. During the Mao era, China supported the national liberation movements of Arab countries, as well as the Palestinian cause, but ties were limited as China turned largely inward in the 1960s and 1970s.[3] In the late 1970s, Deng Xiaoping's reforms laid the foundation for expanding economic relations with Middle Eastern countries, with total two-way goods trade between China and the region rising from $3 billion in 1992 to $444.2 billion in 2023.[4] Xi has expanded China's footprint in the region during his tenure, particularly by recruiting Middle Eastern states as partners for his signature initiatives. For example, 21 Arab states, along with the Arab League, have formally signed onto the Belt and Road Initiative (BRI), 17 Arab states have endorsed Xi's Global Development Initiative, 15 have become members of the Asian Infrastructure Investment Bank, and 14 have participated in the China-Arab Cooperation Initiative for Data Security.†[5] In his written testimony before the Commission, Jonathan Fulton, an associate professor at Zayed University and nonresident senior fellow at the Atlantic Council, assessed that "all in all, Chinese diplomacy has been highly active and quite successful laying the groundwork for a deeper presence in the Middle East."[6]

China has developed a broad and systematic diplomatic approach to the Middle East, utilizing a variety of bilateral and multilateral formats for engagement.[7] Beijing defines its diplomatic relationships using different types of partnerships, which Chinese scholar Xiang Haoyu, a research fellow at the Ministry of Foreign Affairs-affiliated think tank China Institute of International Studies, asserts can be flexibly adapted to the counterpart country's conditions and needs (see Table 1).[8] China has bilateral diplomatic relations with all Middle Eastern countries, which include comprehensive strategic partnerships at the top level of the

*Although the "Middle East" is a broad term often used to encompass North Africa, the Caucuses, and South and Central Asia, this chapter will primarily, but not exclusively, focus on China's relations with the following countries: Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, the United Arab Emirates, and Yemen.

†Xi's first diplomatic tour of the region took place in January 2016; he arrived first in Saudi Arabia and then traveled to Egypt and Iran. During the visit, China inked Comprehensive Strategic Partnership agreements with both Iran and Saudi Arabia. Jonathan Fulton, "Friends with Benefits: China's Partnership Diplomacy in the Gulf," *Project on Middle East Political Science*, March 2019.

diplomatic hierarchy, followed by strategic partnerships, friendly cooperative partnerships, and an "innovative comprehensive partnership" with Israel exclusively.[9] At the multilateral level, China uses the China-Arab States Cooperation Forum (CASCF), made up of Arab League members, and the Forum on China-Africa Cooperation, which includes nine Arab League members, to map out cooperation priorities with regular ministerial-level meetings as well as sub-ministerial-level, issue-specific working groups.[10] China also plays an influential role in BRICS and the Shanghai Cooperation Organization (SCO), which have both admitted Middle Eastern states as members in recent years.*[11] (For more on China's activities in BRICS and the SCO in 2024, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).")

Table 1: Types of China's Diplomatic Partnerships in the Middle East

Type of Diplomatic Partnership	Scope	Partners
Comprehensive Strategic Partnership	Close cooperation in a wide range of areas and coordination on regional and international affairs	Egypt, Iran, Saudi Arabia, the United Arab Emirates (UAE), Bahrain
Strategic Partnership	Coordination on regional and international affairs, including military	Iraq, Jordan, Kuwait, Oman, Palestinian Authority, Qatar, Syria, Turkey
Friendly Cooperative Partnership	Lowest tier, focused on strengthening cooperation on bilateral issues including trade	Lebanon, Yemen
Innovative Comprehensive Partnership	Technology-focused	Israel

Source: Various.[12]

China also conducts diplomatic engagement on specific regional issues through the appointment of special envoys. Beijing appointed its first special envoy on the Middle East Issue focused on Israel and Palestine in 2002 and a special envoy on the Syrian issue in 2016.[13] Dr. Fulton assesses that the envoys are designed to present China "as an actor with influence and interest in these issues, although the impact of each has been marginal."[14] For example, in October 2023, Special Envoy Zhai Jun embarked on a tour aimed at promoting peace talks between Israel and Hamas.[15] Dr. Fulton said the visit was intended primarily to "demonstrate China's solidarity with Arab causes" and promote an alternative vision for the region from that offered by the United States.[16] As of this writing, however, neither the envoy nor China's mediation efforts have contributed to any substantive progress on talks between the two sides.[17]

*According to Dr. Fulton's written testimony before the Commission, BRICS expanded for the first time in 2023 to include Saudi Arabia, Egypt, Iran, the UAE, and Ethiopia, providing the organization with a presence in the Middle East and North Africa (MENA) and Horn regions, while the SCO admitted Iran in the same year. Bahrain, Egypt, Kuwait, Qatar, Saudi Arabia, and the UAE are all dialogue partners of the SCO but are still not full members. Jonathan Fulton, written testimony before the U.S.-China Economic and Security Review Commission, *Hearing on China and the Middle East*, April 19, 2024, 3.

China's Interests in and Views of the Middle East

China has varied economic and strategic interests in the Middle East. In terms of economic goals, China seeks access to resources and markets across the region, buying energy, increasing trade, and winning infrastructure construction contracts.[18] According to written testimony before the Commission by Dawn C. Murphy, an associate professor at the U.S. National War College, Beijing's broader diplomatic aims in the region include ensuring silence or supportive statements from Arab states on Beijing's actions in Xinjiang and Hong Kong, garnering support for China's stance on Taiwan and the South China Sea, and promoting Xi's signature initiatives like BRI, the Global Development Initiative, and the Global Security Initiative.[19] China views the Middle East as part of a broader vision of a new global order that is led by China and safe for illiberal, authoritarian regimes like itself.[20] China's engagement with Middle Eastern countries is illustrative of its broader effort to counterbalance the United States and position itself as the leader of a new world order based on its state-centered, authoritarian, self-proclaimed alternative to Western liberalism.[21]

China has sought to appeal to Middle Eastern governments on the basis of its values, which are framed as promoting sovereignty, territorial integrity, self-determination, and noninterference in the domestic affairs of states rather than the liberal norms of democracy, free markets, human rights, and international institutions.[22] According to Dr. Fulton, by making these non-democratic values the normative framework of its global initiatives, China has created an attractive option for "governments and societies long frustrated by the inconsistent promotion of liberal values from the west, or by those that reject liberalism altogether."[23] For example, China's reaction to the Israel-Hamas war—and in particular its support of the Palestinian cause and condemnation of Israel as an extension of the United States—has also been designed to reinforce its identity as the leader of what it refers to as the "Global South."[24] (For more on China's usage of the term "Global South," see Chapter 2, "Security and Foreign Affairs (Year in Review)")

However, China does not appear to wish to take up the U.S. role of major security contributor or build a network of alliances in the Middle East.[25] According to Yun Sun, director of the China Program at the Stimson Center, China instead envisions a new system in the Middle East that would "displace U.S. dominance without replacing it."[26] China views the Middle East as an arena of strategic competition with the United States, where its increased engagement will facilitate the rise of an illiberal world order and accelerate the decline of U.S. influence. Jon B. Alterman, director of the Middle East Program at the Center for Strategic and International Studies, asserts that Beijing is seeking to "peel the region away from the United States."[27] At the same time, Dr. Alterman notes that China's "spectacular absence" of diplomatic engagement on Arab and Israeli issues, Red Sea navigation, and other issues where Beijing has equities "is a sign that China's not replacing [the United States] in the Middle East and doesn't want to play a larger role."[28] Dr. Fulton articulates that China's economic interests in the region have not required a corresponding political or security role, and Beijing has

shown no indication that it will do so, instead benefiting from the "U.S. security architecture that underpins the region's fragile status quo."[29]

Finally, China continues to view the Middle East as a source of instability and intractable security challenges, which it is not necessarily willing or able to resolve. Chinese experts and analysts assess the region as one of frequent crises, including conflict between Israel and its neighbors, terrorism, political movements for democratization such as the Arab Spring, and potential threats to China's energy imports.[30] China has also blamed the United States for the region's security problems, most recently asserting that Washington's support for Israel in its war with Hamas has been a destabilizing force.[31]

Consistent with these interests and concerns, Chinese diplomatic activities in the Middle East can be divided into three lines of effort that will be explored in the following pages. The first is advancing Chinese global leadership. The second is undermining U.S. relations with key Middle Eastern partners, notably Saudi Arabia and the UAE. The third is supporting U.S. adversaries, with a particular focus on Iran.

Building Middle Eastern Support for Chinese Global Leadership

The Middle East has become an important arena for the CCP to advance its vision of a new China-led global order. A major aspect of this effort is China's increasing efforts to portray itself as a neutral mediator in regional conflicts. In addition, China is heavily promoting Xi's three major initiatives—the Global Development, Global Security, and Global Civilization Initiatives—as the framework for implementing this bid for global leadership. Finally, China engages the Middle East through multinational Beijing-led venues such as the CASCF.

China Attempts to Paint Itself as a Responsible, Neutral Party in Mediation Efforts

Beijing's push to position itself as a conflict mediator in the Middle East is part of a larger strategy to portray itself as a global leader, although the effectiveness of these efforts is debatable.[32] According to Dr. Murphy, China's efforts to mediate disputes in the region are not new, but Beijing has recently shown a "willingness to publicize its behavior" and may encroach on the United States' regional interests.[33] China's role in the Saudi Arabia-Iran rapprochement could be seen as a significant win for China, but according to Dr. Fulton, most of the groundwork was already laid before Beijing's involvement, and the rapprochement itself was the result of domestic political and economic pressures within Saudi Arabia and Iran.*[34]

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*China's hosting of the final round of negotiations emerged from Xi's December 2022 state visit to Riyadh and a subsequent visit by Iranian President Ebrahim Raisi to Beijing in February 2023, although Oman and Iraq had played a major role in prior rounds of negotiation, hosting five previous rounds of talks. *The National*, "Years of Secretive Talks behind Saudi-Iran Rapprochement," March 10, 2023; Jonathan Fulton, "Iran's Economic Future Is Uncertain. It's No Surprise Why Raisi Visited China," *Atlantic Council*, February 22, 2023; Maziar Motamedi, "Iran, Saudi Arabia Hold Fifth Round of Talks in Baghdad," *Al-Jazeera*, April 23, 2022.

The Israel-Hamas War and the Limits of China's Mediation Diplomacy

In the decade leading up to the current conflict between Hamas and Israel, Beijing sought to balance its relations with both sides and paint itself as a neutral party, but ultimately it demonstrated its limited approach through hollow rhetoric. In 2013, China offered a proposal for a two-state solution during nearly simultaneous separate meetings with Israeli Prime Minister Benjamin Netanyahu and Palestinian President Mahmoud Abbas in Beijing.[35] At the time, Yitzhak Shichor, a professor of political science and Asian studies at the University of Haifa, criticized China's vague proposal,[36] asserting that "it's not really a plan, just a collection of slogans trying to satisfy everybody."[37] During 2017, China again met with President Abbas and hosted the first Palestinian-Israeli Peace Symposium since 2006.[38] In 2021, Foreign Minister Wang Yi raised a repackaged peace plan at the UN and during state visits to Middle Eastern countries, which continued to be used as a high-profile and rhetorical framing opportunity rather than an actionable proposal.[39] In April 2023, just a month after China's efforts to broker a peace deal between Saudi Arabia and Iran, then Chinese Foreign Minister Qin Gang held two separate phone calls with his Israeli and Palestinian counterparts offering to facilitate peace talks between the two sides.[40] In a further attempt to boost Beijing's standing in the region, China signed a strategic partnership agreement with Palestinian Authority President Mahmoud Abbas during a June 2023 meeting, which included an economic and technological cooperation pact, a deal on mutual visa exemption for diplomatic passports, and the establishment of a diplomatic friendship between the Chinese city of Wuhan and Ramallah.[41] At a time of comparatively strained relations between Israel and the United States, Prime Minister Netanyahu announced during a June 2023 meeting with U.S. members of Congress that China had invited him to travel to Beijing.[42] The trip, originally planned for October 2023, was canceled after the outbreak of war in Gaza.[43]

Beijing's response to Hamas's October 7th terrorist attack damaged over a decade of relationship-building with Israel and exposed its cynical use of the conflict to align itself with Arab countries at the expense of Israel and its people.[44] Moreover, Beijing's response to the attack has also been intended to burnish its image as the self-declared leader of low- and middle-income countries—countries it increasingly refers to as the "Global South"—and further its rivalry with the United States.[45] Dr. Fulton argues that Beijing's response to events since the October 7th Hamas terrorist attack have made China appear transactional and self-interested rather than evoking an image of a responsible extra-regional power.[46] On October 8th, China's foreign ministry initially issued a statement that called on "relevant parties to remain calm, exercise restraint and immediately end the hostilities," failing to place the onus of responsibility on Hamas for the attacks.[47] The following day, Chinese foreign ministry spokesperson Mao Ning expressed sympathy for the victims but still failed to condemn Hamas.*[48] Spokesperson

*On October 13th, Israel's foreign ministry expressed "deep disappointment" to China's envoy to the Middle East over Beijing's lack of a clear and unequivocal condemnation of Hamas. *Re-*

Mao's initial statement was made at the same time a U.S. bipartisan congressional delegation of six senators met with Xi in Beijing, during which time the delegation urged China to issue a stronger condemnation of the attack.[49] Minister Wang called for solidarity among Muslim countries in a call to the Iranian foreign minister just days later.*[50] Wang said in an October 15th call with his Saudi counterpart that Israel's actions in Gaza went "beyond the scope of self-defense," criticizing the actions as "collective punishment."[51] On October 23, 2023, Wang Yi spoke separately with high-level diplomats from Israel and the Palestinian Authority, reportedly stating that Israel's "reasonable security concerns" could only be addressed though a political settlement and expressing sympathy for the people of Palestine while failing to condemn Hamas by name.†[52] In November 2023, China convened a special meeting of BRICS, attended by Xi, to discuss the Israel-Hamas war.‡[53] During the March 2024 National People's Congress and Chinese People's Political Consultative Conference, also known as the Two Sessions, Minister Wang told a reporter that China supported full UN membership for Palestine, taking a subtle jab at the United States by calling for "individual Security Council members to refrain from placing obstacles in its way."[54] Dr. Murphy asserts that Beijing has utilized its presence in the UN Security Council (UNSC) to further this aim, stating that "it is likely Beijing's position on the Israel-Hamas war and its UNSC voting on this issue will positively resonate with the Arab World, the Muslim-majority world, and many countries in the Global South more broadly."[55]

In subsequent months, China has focused on promoting intra-Palestinian unity and has also held meetings with Israel that do not appear to have created any discernible outcomes for advancing a resolution to the conflict.[56] In March 2024, Chinese diplomat Wang Kejian made a multi-stop trip to the Middle East, meeting with representatives from the Israeli Foreign Ministry and Palestinian Authority, followed by a meeting in Qatar with Hamas political chairman Ismail Haniyeh (since killed while in Iran).[57] In April 2024, China hosted Hamas and Fatah officials, two rival factions, for talks aimed at intra-Palestinian reconciliation, a follow-up to meetings

uters, "Israel Says 'Deeply Disappointed' Over Lack of China Condemnation of Hamas Attack," October 13, 2023.

*China condemned Israel's April 2024 strike on the Iranian Embassy in Damascus but not Iran's missile and drone attacks—its first direct attack on Israel from Iranian soil—with Minister Wang Yi stating in a call with his Iranian counterpart that Iran's attack was a limited act of self-defense. *Xinhua*, "Chinese, Iranian FMs Hold Phone Talks on Israel-Iran Tensions," April 16, 2024; China's Ministry of Foreign Affairs, *Wang Yi Has a Phone Call with Foreign Minister of Iran Hossein Amir-Abdollahian*, April 15, 2024; *Wall Street Journal*, "Iran's Direct Attack on Israel Is a First," April 15, 2024.

†On October 8, 2024, following the one-year anniversary of the Hamas terrorist attack, a foreign ministry spokesperson again paid lip service to Israel's "reasonable security concerns" without mentioning Hamas or acknowledging its role in the conflict. China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Mao Ning's Regular Press Conference on October 8, 2024*, October 8, 2024.

‡The virtual meeting was chaired by President Cyril Ramaphosa of South Africa and attended by Brazilian President Luiz Inácio Lula da Silva, Russian President Vladimir Putin, Crown Prince of Saudi Arabia Mohammed bin Salman, Egyptian President Abdel Fattah al-Sisi, Iranian President Ebrahim Raisi, President Sheikh Mohamed bin Zayed Al Nahyan of the UAE, Ethiopian Prime Minister Abiy Ahmed Ali, the foreign ministers of Argentina and India, and Chinese Foreign Minister Wang Yi and Director of the CCP General Office Cai Qi. China's Embassy in the United States of America, *Xi Jinping Attends the Extraordinary Joint Meeting of BRICS Leaders and Leaders of Invited BRICS Members on the Situation in the Middle East with Particular Reference to Gaza*, November 22, 2023.

between the two in Russia in February.[58] That same month, Zhai Jun, China's Special Envoy on the Middle East Issue, met with Israeli Ambassador to China Irit Ben-Abba Vitale to discuss the conflict; then, in June 2024, the two exchanged views on China-Israel relations and "international and regional issues of mutual interest and concern."[59] Further rounds of talks between Palestinian factions were held in Beijing in July 2024, in which 14 groups signed what was dubbed the "Beijing Declaration," agreeing to recognize unity under the framework of the Palestine Liberation Organization, a nationalist umbrella organization composed of disparate factions that represents the Palestinians at international fora.[60] However, experts doubt that this reconciliation in preparation for the post-war rebuilding of Gaza represents the end of the rivals' deep divisions given the statement's lack of a follow-up plan.[61]

Beijing Cultivates Middle Eastern Support for Chinese Initiatives and Global Leadership

China is utilizing Xi's foreign policy frameworks—the Global Security Initiative, the Global Development Initiative, and the Global Civilization Initiative—in diplomacy with Middle Eastern countries to cultivate support for Chinese leadership in matters of security, development, and culture.[62] Beijing has worked to attach the initiatives to various projects in order to advance their implementation across the Middle East. It is not clear how effective these initiatives have been in the region; Dr. Fulton says that although the three initiatives have been appearing in joint communiques across the region and have been cited by local actors as useful contributions from China, they do not appear to be widely understood yet, and many local governments are not aware of them.[63]

Global Security Initiative

The Global Security Initiative was first introduced by Xi in an April 2022 speech at the Boao Forum and described as a proposal to address "deficits in peace, development, security, and governance" through adherence to six core concepts and principles that reflect China's preferences for regime security and state sovereignty.*[64] According to M. Taylor Fravel, a professor of political science at the Massachusetts Institute of Technology, China is utilizing the initiative to criticize and discredit the United States and its alliances, opening up space for Chinese-led alternatives.[65] Sheena Chestnut Greitens, an associate professor at the University of Texas at Austin, sees the Global Security Initiative as the externalization of Xi's Comprehensive National Security Concept and an effort to "create new forms of global security governance that bypass or reduce the importance of the U.S. alliance system, thereby blunting Washington's ability to contain China or foment 'color revolutions' inside it."[66] (For more on the Comprehensive National Security Concept,

*These six principles are commitment to: (1) the vision of common, comprehensive, cooperative, and sustainable security; (2) respecting the sovereignty and territorial integrity of all countries; (3) abiding by the purposes and principles of the UN Charter; (4) taking the legitimate security concerns of all countries seriously; (5) peacefully resolving differences and disputes between countries through dialogue and consultation; and (6) maintaining security in both traditional and non-traditional domains. China's Ministry of Foreign Affairs, *The Global Security Initiative Concept Paper*, February 21, 2023.

see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.")

The Global Security Initiative lists the establishment of a "new security framework" in the Middle East among its priorities for international cooperation.* [67] Minister Wang reportedly introduced the concept during the second China-led Middle East Security Forum in September 2022.[68] Minister Wang describes the new security architecture as emphasizing the leading role of Middle Eastern countries in regional security affairs, abiding by the UN Charter, and focusing on Israel-Palestine peace talks.[69] According to Dr. Fravel, the framework could be interpreted as an effort to undermine U.S. leadership in the region, given its emphasis on resisting outside interference and sanctions.[70] Beijing presented the March 2023 normalization of relations between Iran and Saudi Arabia in Beijing as a model for resolving "hotspot issues"† and a major victory for the Global Security Initiative, crediting it with a "wave of reconciliation" across the region.[71]

Global Development Initiative

The Global Development Initiative is China's development framework that Beijing claims aims to unite countries under the concepts of common development and "win-win cooperation."[72] This initiative focuses on smaller-scale development projects‡ implemented by the Ministry of Foreign Affairs in partnership with existing and newly established multinational institutions, in contrast to BRI's large state-owned enterprise-driven infrastructure projects, but together they act as drivers of China's "South-South cooperation" strategy.§ [73] According to Chen Yunnan, a research fellow at the London-based Overseas Development Institute, a global affairs think tank, the Global Development Initiative is "conveniently free of the negative optics and baggage that the BRI has accumulated over the years with its spotty environmental record and especially, the polemical

*The Global Security Initiative is frequently mentioned during China's diplomatic meetings and has been written into numerous bilateral and multilateral documents. Xi also promoted the initiative during his second major diplomatic tour of the Middle East in December 2022, mentioning it in speeches given at the first China-Gulf Cooperation Council and China-Arab States Summits. China Institute of International Studies, "Report on the Implementation of the Global Security Initiative," July 2024, 10. China's Ministry of Foreign Affairs, *Building on Past Achievements and Jointly Creating a Brighter Future of China-GCC Relations*, December 9, 2022; China's Ministry of Foreign Affairs, *Carrying Forward the Spirit of China-Arab Friendship and Jointly Building a China-Arab Community with a Shared Future in the New Era*, December 9, 2022; *Saudi Press Agency*, "Riyadh Declaration - The First Arab-China Summit," December 9, 2022; China's Ministry of Foreign Affairs, *Carrying Forward Our Millennia-Old Friendship and Jointly Creating a Better Future*, December 8, 2022.

†Xi stated in June 2024 that international hotspot issues include Ukraine, the Israel-Hamas conflict, the Korean Peninsula, Iran, Myanmar, and Afghanistan at an event in Beijing celebrating the 70th anniversary of the "Five Principles of Peaceful Coexistence." Shi Jiangtao, "China's Xi Jinping Calls on Nations to Unite against 'Iron Curtains of Confrontation,'" *South China Morning Post*, June 28, 2024.

‡According to Manoj Kewalramani, a fellow in China studies and chair of the Indo-Pacific Studies Programme at the Takshashila Institution, Global Development Initiative projects cover domains including poverty reduction, food security, pandemic and vaccines, climate change, industrialization, the digital economy, digital connectivity, and development finance. Manoj Kewalramani, "China as a Rising Norm Entrepreneur: Examining the GDI, GSI and GCI," *Trends in Southeast Asia* 2:2024 (January 2024).

§China often uses the term "South-South cooperation" to refer to its engagement with developing countries. According to China's Ministry of Foreign Affairs, "South-South cooperation" is "an important component of Deng Xiaoping Theory" that is necessary for developing countries to support and "enhance solidarity" with one another. China's Ministry of Foreign Affairs, *A "Dialogue of the Century" on South-South Cooperation*, August 29, 2022.

accusations of predatory lending and debt traps that it has been unable to shake."[74]

Since the Global Development Initiative was announced in 2021, 17 Arab countries have endorsed it and 12 Arab states have joined the initiative's "Group of Friends."[75] A June 2023 progress report on the initiative, published by the State Council-affiliated Center for International Knowledge on Development, said that the China-led Global Clean Energy Cooperation Partnership—which has encouraged participation by members of the Arab League, the SCO, BRICS, and others to make a joint effort in the development of green and low-carbon energy—will be developed under the Global Development Initiative framework, without providing further details on how the initiative will enhance or change the partnership.[76] During a May 2024 speech, Minister Wang said China has initiated 30 development cooperation projects involving Arab countries under the Global Development Initiative.*[77]

Global Civilization Initiative

The Global Civilization Initiative is a Chinese framework intended to combat Western countries' promotion of "universal values" by advocating for the respect of a "diversity of civilizations."[78] The Global Civilization Initiative, launched in March 2023, is intended to create an alternative framework to liberal values and norms.†[79] During Xi's March 2023 speech announcing the initiative to the Chinese Communist Party High-Level Dialogue with Political Parties, he stated that countries must "refrain from imposing their own values or models on others."[80] According to R. Evan Ellis, a research professor at the U.S. Army War College Strategic Studies Institute, "By promoting the relativism of values and arguing against calling out bad behavior and seeking to stop it, the concept appeals to regimes that desire to do what they wish."[81]

While the initiative remains somewhat nebulous, an official readout from the July 2023 China-Arab States Political Parties Dialogue suggests it will take the form of exchanges and cooperation between local governments, think tanks, universities, nongovernmental organizations, and media entities.[82] The readout also stated that the CCP is "willing to invite" 200 leaders of Arab political parties, political organizations, and think tank and media representatives to visit China for exchanges every year, but it did not outline specific details regarding which countries will be invited, what kinds of activities they will participate in, or how long the CCP will carry out the exchanges.[83] In May 2024, Xi announced that China would establish

*The first batch of Global Development Initiative projects, published in 2022, listed projects involving Middle Eastern countries that focus on issues such as pandemic response, poverty reduction, green development, and food security and are sponsored by the China International Development Cooperation Agency, China's Ministry of Commerce, and various UN organizations. Wang Yi has stated that a total of 45 development cooperation or aid projects were "underway or under consideration" in the region. China's Ministry of Foreign Affairs, *Let Us Take Real Action to Build a China-Arab Community with a Shared Future*, May 30, 2024; China's Ministry of Foreign Affairs, *List of First-Batch Projects of GDI Project Pool*, September 21, 2022.

†According to R. Evan Ellis, a research professor of Latin American studies at the U.S. Army War College Strategic Studies Institute, "The emphasis on 'civilizations' arguably prioritizes China, as well as other states with linkages to ancient empires, including Beijing's current illiberal partners Russia and Iran (Persia), and Global South countries China is courting (Egypt and Turkey) while deprivileging the voice of the United States as a relatively new and heterogeneous actor in 'civilizational' terms." R. Evan Ellis, "The Trouble with China's Global Civilization Initiative," *Diplomat*, June 1, 2023.

a China-Arab Center of the Global Civilization Initiative and work with Arab countries to "achieve the goal of 10 million two-way visits of tourists in the next five years."[84] If these exchanges come to fruition, this may indicate that Beijing sees the Middle East as a key region for expanding the use of the Global Civilization Initiative as a new brand and tool for greater soft power influence.

China Garners Support from Middle East on Repressive Uyghur Policies

Although systematic elimination of Muslim religious expression is a central part of the human rights crisis taking place in the Xinjiang Uyghur Autonomous Region (XUAR), the governments of Muslim majority countries have remained largely silent on the matter.[85] China's efforts have been successful in garnering the support of Arab countries in the Middle East, some of which have even issued statements of support of China's policies in the region and have cooperated in returning Uyghurs to China, where they face prohibitions on Muslim religious practices, arbitrary detention, and torture in contravention of international law.[86]

Prior to the beginning of the crackdown in 2016, Uyghurs frequently traveled to the Middle East for business, for education, or to undertake the Hajj. Many Uyghurs were subsequently sent for "reeducation"* in the camps simply for traveling to one of 26 "sensitive countries," which included Egypt, Iran, Iraq, Saudi Arabia, Syria, Turkey, and the UAE.[87] Yet, many of these countries have made statements of support for China's policies through UN letters or during state visits.[88] Middle Eastern diplomats and journalists are given tours of the region and encouraged to repeat Chinese narratives.[89] Furthermore, some Middle Eastern countries—including Egypt, Qatar, Saudi Arabia, Syria, and the UAE—have been cooperating with the Chinese security services in locating, detaining, or providing for the refoulement of Uyghurs.[90]

As a country with cultural affinity for Uyghurs and other Turkic peoples, Turkey's policies are somewhat different, and it remains home to a large Uyghur diaspora. Even so, Turkey has increased its cooperation with China in recent years, limiting information about the crisis in the media, constricting Uyghur activism, and increasing the threat of deportation.[91] In June 2024, Turkish Foreign Minister Hakan Fidan made the first high-level visit to XUAR by a Turkish official since 2012, announcing greater counterterrorism cooperation and trade while avoiding overt criticism of Beijing's human rights abuses.†[92]

*In May 2014, Beijing launched its "Strike Hard Campaign against Violent Terrorism" in Xinjiang. According to Human Rights Watch, "Since at least 2014, the Chinese government has subjected Turkic Muslims to various crimes against humanity, including mass arbitrary detention, torture and deaths in detention, and enforced disappearances." Human Rights Watch, "'Break Their Lineage, Break Their Roots': China's Crimes against Humanity Targeting Uyghurs and Other Turkic Muslims," April 19, 2021.

†Foreign Minister Fidan commented during his visit that Xinjiang's cities of Urumqi and Kashgar are "Turkic and Islamic cities," which observers asserted could have been a subtle rejection of China's claims over the region. The Chinese media did not react to Fidan's comments. Arslan and Erkin Tarim, "In China, Turkish Foreign Minister Calls Urumqi and Kashgar 'Turkic' Cities," *Radio Free Asia*, June 6, 2024; Kasim Kashgar, "Turkish Diplomat's Visit to Uyghur Region in China Raises Concerns," *Voice of America*, June 6, 2024.

China Garners Support from Middle East on Repressive Uyghur Policies—*Continued*

The leaders of Middle Eastern countries have evidently determined that it is not in their interest to condemn crimes against humanity taking place in XUAR against a Muslim population. Obtaining silence or support from Middle Eastern countries for Chinese policies in Xinjiang, as well as Hong Kong and Taiwan, is a high priority in China's engagement with the region, as Dr. Murphy pointed out in her testimony before the Commission.[93] Dr. Fulton observes that Middle Eastern countries have little incentive to jeopardize their economic interests and trade relations and that China appears to have successfully framed the issue as one similar to Middle Eastern governments' concerns about political Islam and terrorism.[94]

Beijing Engages China-Arab States Cooperation Forum to Bolster Regional Legitimacy

Although China conducts diplomatic activities in a range of different multilateral institutions and platforms, the CASCF, established in 2004, serves as China's primary multilateral coordination mechanism with the League of Arab States,* including the Gulf Cooperation Council (GCC) countries.[95] The CASCF holds ministerial meetings every two years, and other senior officials meet on an annual basis to implement any action plans that have been developed.[96] The CASCF is used by China for several key purposes:

- The forum emphasizes political cooperation with China, particularly China's "Five Principles of Peaceful Coexistence"† and the concept of "South-South Cooperation."[97] The Five Principles of Peaceful Coexistence "represent a very conservative interpretation of Westphalian norms of sovereignty, territorial integrity, and non-interference," Dr. Murphy said.[98] They stand in contrast to the liberal, rules-based international order's attention to human rights and democratic values, and in doing so they appeal to the region's autocratic governments.
- According to Dr. Murphy, the CASCF "explicitly includes cooperation on key Arab political issues," such as the Middle East peace process and more recently discussion of the ongoing conflict in Gaza.[99]
- China uses the forum to solicit support for various issues important to China internationally. Dr. Murphy notes that one example of this type of behavior was the inclusion of wording in the CASCF documents supporting China's position on territorial and maritime disputes in the South China Sea in 2016.[100] Chi-

*The League of Arab States includes Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, the United Arab Emirates, and Yemen. Diplomatic Service of the European Union, *League of Arab States (LAS) and the EU*, August 3, 2021.

†The Five Principles are: mutual respect for territory and sovereignty, mutual nonaggression, mutual noninterference in internal affairs, equality and mutual benefit, and peaceful coexistence. China's Ministry of Foreign Affairs, *Build a New International Order on the Basis of the Five Principles of Peaceful Coexistence*.

na likewise has used the forum to seek statements of support from Middle Eastern states for its policies in Xinjiang, providing diplomatic cover for China's human rights abuses against Uyghurs and other Turkic peoples.[101] (See the "China Garners Support from Middle East on Repressive Uyghur Policies" textbox above for more on these efforts.)

- China has also used the forum as a primary multilateral mechanism to coordinate economic activities with the Middle East.[102]

The most recent ministerial-level meeting of CASCF was held in late May through early June 2024 and focused on issues such as further economic and technological cooperation as well as a potential ceasefire in Gaza.[103] China and the Arab states also issued a 21-point joint statement at the forum criticizing Israel and the United States, further demonstrating Beijing's one-sided actions as it has attempted to portray itself as a neutral mediator of the war.[104]

China Expands Engagement with Key U.S. Partners in the Middle East

China is seeking to bolster its relations and influence with Arab states in order to expand economic ties and promote its vision of an alternative world order, and in the course of doing so it seeks to exploit tensions in these countries' relationships with the United States. China places a particularly high priority on its relationships with Saudi Arabia, the UAE, and Egypt, all of which have signed comprehensive strategic partnership agreements with China and hosted visits by Xi at least once—Egypt in 2016, the UAE in 2018, and Saudi Arabia in 2016 and 2022.*[105] Minister Wang also made stops during a six-country Middle East tour in 2021 and traveled to Egypt during a four-country tour of African countries in 2024.[106]

China Seeks to Become Alternative Strategic Partner for Saudi Arabia

China and Saudi Arabia have shown mutual interest in deepening their relationship, as Riyadh has sought to court Beijing, and China has attempted to portray itself as an essential strategic partner to Saudi Arabia.[107] Dr. Alterman asserts that China has sought to do so "partly in the wake of Saudi concerns that the United States has been abandoning the Middle East as it pivots toward Asia, and partly by marketing the idea that the Chinese experience in economic growth holds lessons for Saudi Arabia's own ambitious economic diversification efforts."[108] Saudi Arabia's desire to draw closer to China grew following the diplomatic fallout caused by the murder of Jamal Khashoggi in 2018.[109] Dr. Alterman notes, however, that this motivation has dampened in recent years partly due to the Biden Administration's reassurance that the United States is not hostile toward Saudi Arabia and because China's regional diplomacy "is no substitute for the United States."[110] Despite this more recent U.S. effort, Saudi Arabia has still pursued engagement with China, seeing BRI as a way to advance its Vision 2030 agenda.[111] Prior to

*Before Xi's 2016 visit to Saudi Arabia, Egypt, and Iran, the Ministry of Foreign Affairs published the *Arab Policy Paper*, which laid out the blueprint for cooperation in a variety of areas, emphasizing cooperation on energy, investment, and high technology. China's Ministry of Foreign Affairs, *China's Arab Policy Paper*, January 13, 2016.

Xi's 2022 visit to the country, Saudi Arabian state media said the Kingdom was keen to develop bilateral relations with China as part of its strategic plan to boost partnerships with "all influential countries and international powers."[112] The two sides enhanced their Comprehensive Strategic Partnership, issuing a joint declaration on economic and defense cooperation in December 2022.[113] During the 2022 trip, Xi also attended the first Arab-China Summit for Cooperation and Development held in Riyadh in what the Ministry of Foreign Affairs called the "highest-level diplomatic event between China and the Arab world since the founding of the People's Republic of China."[114]

China's relations with Saudi Arabia have been rooted in economic interests, although there is also a small, somewhat limited military strand that runs through bilateral ties.[115] Dr. Alterman notes that since the 1990s, Saudi Arabia has engaged more deeply with Chinese firms when it sought low-cost construction options amid a slumping economy, with Chinese firms building some of Saudi Arabia's most important infrastructure projects, including light rail, desalination plants, and industrial projects, as well as contributing to the country's information technology (IT) systems.[116] Saudi Arabia occasionally sought to procure Chinese weapons and technology as alternatives to those the United States would not provide, like CSS-2 missiles in the 1980s, with China now selling Saudi Arabia drones, helping Riyadh build ballistic missiles, and being involved in domestic surveillance efforts.[117]

China-Saudi Cooperation on Ballistic Missiles

Saudi Arabia is diversifying its own arms procurement in response to Iran's growing military capabilities, including by acquiring Chinese ballistic missile technology and expertise. Although China is not a member of the Missile Technology Control Regime (MTCR), China's government nevertheless made a formal voluntary commitment in 2000 to abide by its export restrictions on ballistic missile components and technology.[118] Despite this, China has played a key role in Saudi Arabia's missile procurement efforts.[119] In the late 1980s, China first delivered liquid-propelled Dong Feng-3A (DF-3A) missiles to Saudi Arabia, yet the transfer was not publicly acknowledged until 2014.[120] China has reportedly also transferred additional Dong Feng-class missiles to Riyadh since 2018.*[121] Although U.S. intelligence agencies have raised concerns about the transfers, the United States was reluctant to impose consequences on Saudi Arabia in 2021, a strategic partner in the region, according to the *Wall Street Journal*.[122] The Arms Control Association asserts that although not illegal, China's assistance to Saudi Arabia "contradicts its vow to abide by the MTCR," as China is not a member of the export control regime but has pledged to adhere to its guidelines prohibiting the export of missiles capable of delivering a 500-kilogram payload more than 186 miles (300 kilometers).[123] In December 2021,

*Dong Feng ballistic missiles, produced by the China Aerospace Science and Industry Corporation, have a range of approximately 170 miles to 9,320 miles. The missiles have the capability to engage targets at short, medium, intermediate, and intercontinental ranges and are equipped with diverse warhead-carrying capabilities, enabling strong deterrence abilities. *Army Technology,* "Dongfeng (DF) Ballistic Missiles, China," August 15, 2022.

China-Saudi Cooperation on Ballistic Missiles—*Continued*

analysts from the James Martin Center for Nonproliferation Studies, affiliated with the Middlebury Institute of International Studies at Monterey, assessed that satellite images of a missile facility near Al-Dawadmi, Saudi Arabia, indicate the facility was likely built with Chinese assistance.[124] During the same month, reports emerged that U.S. intelligence agencies had assessed that Saudi Arabia was producing ballistic missiles domestically with Chinese assistance.[125] It remains unclear whether the missile being produced at the identified site is a Chinese design, but given China's large transfers of ballistic missile technology to Riyadh, it is certainly possible.[126]

UAE Carrying Out Balancing Act between the United States and China

China views the UAE as a country where the United States is gradually losing its influence, and one with whom Beijing has an opportunity to deepen its cooperation. According to a 2020 article by Chinese scholar Tong Fei, an associate researcher at the Chinese Academy of Social Sciences' Institute of West-Asian and African Studies, as the United States has shifted its focus to Asia, Arab countries—including the UAE—have pursued alternative partners, particularly in the economic realm.[127] The UAE is home to an estimated quarter million Chinese nationals, and Chinese firms are active there in construction and other fields.[128] Dr. Tong asserts that "since adopting an eastward foreign policy, the UAE has made deepening its comprehensive strategic partnership with China a top priority in its diplomatic goals."[129] In his testimony to the Commission, Dr. Alterman noted that "the Abu Dhabi government increasingly has sought to strike an 'active neutrality' posture in the world," growing its ties with both China and Russia and confident that it is powerful enough to advance its own interests.[130]

Despite the UAE's willingness to work with Beijing, Chinese experts still assess that there are challenges in their diplomatic relations that need to be overcome. Dr. Tong assesses that although the UAE hopes to take advantage of BRI, strengthen investment cooperation with China, get rid of excessive dependence on oil, and accelerate its economic diversification process, the two countries have little understanding of each other due to regional differences and separate ideologies.[131] Dr. Tong argues that government officials and ordinary people in the UAE not only lack a deep understanding of China but also have doubts about Beijing's Middle East policy.[132] Furthermore, Dr. Tong states that "some UAE elites hope that China can assume more peace and security responsibilities in the Middle East and become a force that can compete with the United States in the Middle East" but that the UAE has concerns about China's cooperation with Iran, which it views as a threat.[133] Dr. Tong also asserts that some within the UAE are dissatisfied with the trade deficit with China, as China has used BRI to obtain energy from the UAE but is unwilling to buy petrochemical products the UAE wants to sell to China.[134] Dr. Tong assesses that because of this, "it can be said that the mutual political trust in the coopera-

tion between the two sides is still relatively fragile."[135] (For more on the challenges that China and the UAE's technological cooperation face under increasing U.S. scrutiny, see the section on "China-Middle East Technology Relations" within this chapter.)

The Reach of Chinese Media in the Middle East

Over the past decade, China has dramatically increased its efforts to build what it calls "discourse power"—the ability to shape global public opinion in the way it does domestically—through its media presence in Middle Eastern countries.[136] It has been pouring resources into expanding the reach of foreign-facing media outlets in the region.[137] Chinese government-connected entities and their proxies have been holding summits, tours, and trainings with foreign journalists, encouraging them to echo Chinese narratives while also controlling local traditional and new media outlets.[138] China has become increasingly adept at utilizing local languages to communicate its preferred narratives, focusing on economic cooperation and providing positive stories on China.[139] In addition to Arabic-language versions of official media such as CGTN, overseas Chinese networks like China-Arab TV serve official narratives as well, partnering with China's Central Propaganda Department to strengthen cooperation in film and TV production in order to "transmit China's voice" and "promote China's image among Arab countries."[140] In 2022, the China Media Group, a Chinese state media organization, and the Saudi Ministry of Media launched a joint partnership initiative to promote relations between Arab countries and China at the Arab-Chinese Media Cooperation Forum.[141] The initiative focuses on promoting the presence of Chinese media in Arab channels and translating Chinese television shows into Arabic for broadcast in the Palestinian Territories, Algeria, Jordan, Sudan, Iraq, and Saudi Arabia.[142]

Chinese experts and state media have pushed a narrative that frames the United States' supposedly declining influence in the region as an opportunity for Beijing to increase its engagement. For example, a July 2022 article by Tang Zhichao, a professor at the University of the Chinese Academy of Social Sciences, argued that the Obama, Trump, and Biden Administrations were "obsessed with strategic competition among major powers and implemented a policy of strategic contraction from the Middle East to achieve a shift to the Asia-Pacific region," which he claims created a vacuum in regional power and security.[143] Dr. Tang argues in a February 2024 article that during the 30 years of the post-Cold War era, "the United States' hegemonic position in the Middle East has gradually fallen from high to low," which has prompted regional countries to "increasingly strengthen their strategic autonomy, providing an important opportunity for the strategic cooperation between China, Russia and Middle Eastern countries to be enhanced."[144] Gao Wencheng, a Xinhua news reporter, also said in June 2023 that recently, "failure" has become a common keyword when the international media discusses the United States' Middle East policy, claiming the United States has lost the "hearts of the people" in the region due to "wanton bullying."[145]

Supporting Iran and Terrorist Groups to Undermine the United States

China and Iran share strong opposition to the U.S.-led liberal international order.[146] As it does with other countries in the region, China takes an opportunistic approach to its relationship with Iran.[147] China will show solidarity with Iran to the degree that it comes at little cost to Beijing; at the same time, it takes advantage of Iran's isolated position, buying discounted oil and failing to fully deliver on promised investments.[148] Dr. Alterman argues that China leverages tensions between the United States and Iran, preferring "a world in which the United States is bogged down in the Middle East and alienates much of the Global South through its actions there."[149] China has shown support to Iran through its rhetorical, military, and economic actions, all of which serve to undermine U.S. interests in the region.

Beijing Props Up Tehran with Rhetorical and Diplomatic Support

China has played a significant role in easing Iran's diplomatic isolation in recent years, particularly through its efforts to shield Iran from further sanctions over its nuclear program. China vocally criticized the re-imposition of sanctions by the United States in 2018 after the United States withdrew from the Joint Comprehensive Plan of Action.[150] It has stated opposition to sanctions on Iran and condemned the United States' Iran policy, with Xi stating during a February 2023 meeting with then Iranian President Ebrahim Raisi that China "opposes external forces interfering in Iran's internal affairs and undermining Iran's security and stability."[151] A likely motivation was that the 2018 sanctions dampened the potential for Chinese trade and investment with Iran despite continued engagement by China's more risk-tolerant companies.[152]

China has also eased Iran's isolation by drawing it into China-led multilateral institutions, with Iran finally achieving its longstanding goal of joining the SCO in 2023.*[153] In 2010, the SCO introduced a membership criteria preventing states with UN sanctions from joining—a move some assess was aimed at preventing Iran's accession.[154] Despite these initial impediments, Iran's Supreme National Security Council announced in August 2021 that the "political obstacles" to accession were resolved through dialogue with Russia, according to Nicole Grajewski, a fellow at the Carnegie Endowment for International Peace.[155] In addition to smoothing out its differences with Tajikistan, Dr. Grajewski said, Iran mustered enough support from China to back its accession.†[156] Presently, Iran is the

*Iran first applied for full membership in the SCO in 2008 and became an observer state in 2005. The SCO is mainly a platform for security cooperation, conducting military exercises, and fighting what China calls the "three evils of terrorism, separatism and extremism," serving as what scholar Nicole Bayat Grajewski calls a "regime-preservation network" to help coordinate internal repression. While the organization is presently little more than a "talking shop," according to Dr. Fulton, it could become a "a key platform for institutionalizing authoritarian cooperation and resilience." Jonathan Fulton, "Iran Joining the SCO Isn't Surprising. But Beijing's Promotion of Illiberal Norms in Eurasia Should Get More Attention," *Atlantic Council*, July 13, 2023; Nicole Bayat Grajewski, "Iran and the SCO: The Quest for Legitimacy and Regime Preservation," *Middle East Policy 30:2* (Summer 2023).

†Then Iranian Foreign Minister Hossein Amir-Abdollahian thanked his Chinese counterpart, Wang Yi, for supporting the country's membership bid in September 2021. Nicole Grajewski,

only Middle Eastern country to have full membership in the SCO, opening up potential closer coordination with China and Russia.* [157]

Iran's accession into the BRICS organization† on January 1, 2024, represents another instance of entrance into alternative multinational institutions, having received some rhetorical support from Beijing. While Russia was the original organizer, BRICS has become a high-profile vehicle of China's "South-South" Cooperation strategy, with Minister Wang calling on it to "oppose attempts to instigate a new Cold War" at the June 2024 ministerial meeting in Russia.[158] In July 2023, Chang Hua, China's then ambassador to Iran, said in an interview with Iranian media that "China supports Iran's membership in the BRICS organization.... Although the agreement of other BRICS members is necessary, we support Iran's aspiration to join the organization." [159] General Secretary Xi met with then President Raisi on the sidelines of the BRICS Summit in August 2023, saying China "stood ready to strengthen cooperation with Iran on BRICS and other multilateral platforms." [160] Although BRICS membership may serve to further align Iran with China and Russia, other members of the organization might have concerns about the possibility of being drawn into an anti-U.S. bloc.

China's Transfer of Dual-Use Technology to Iran and Its Terrorist Groups Threatens U.S. National Security Interests

China's transfer of dual-use technologies and components to Iran and its terrorist proxies—including parts used in armed drones and ballistic missiles—undermines U.S. national security interests and stability in the region.‡ In 2023 and 2024, the Treasury Department placed sanctions on networks of Chinese suppliers and Hong Kong front companies selling components to the Iranian ballistic missile and unmanned aerial vehicle (UAV) programs, including the producers of the Shahed drone used by Russia in Ukraine and in attacks on shipping in the Red Sea.[161] The Department of Commerce's Bureau of Industry and Security has also placed Chinese and Hong Kong companies on the Entity List in 2023 and 2024 for supplying dual-use components for Iran's UAV industry.[162] U.S. Assistant Secretary of State for Near Eastern Affairs Barbara Leaf testified in 2022 that Iranian proxies are using Chinese UAVs, and the Chinese government is not attempting to curtail the sales.[163] According to

"Iranian Membership in the Shanghai Cooperation Organization: Motivations and Implications," *Washington Institute for Near East Policy*, September 15, 2021.

*Full members of the SCO include: China, India, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan, and Uzbekistan. Observer states include Afghanistan, Belarus, and Mongolia. Dialogue partners include Armenia, Azerbaijan, Bahrain, Cambodia, Egypt, Kuwait, Maldives, Myanmar, Nepal, Saudi Arabia, Sri Lanka, Turkey, the UAE, and Qatar. Shanghai Cooperation Organization, "General Information," January 9, 2017.

†The intergovernmental organization originally comprised Brazil, Russia, India, China, and South Africa, with Iran entering alongside Egypt, Ethiopia, and the UAE in January 2024. Russia organized and hosted the first summit in 2009, with meetings held annually going forward. The organization is now sometimes referred to as BRICS+. Marc Jütten and Dorothee Falkenberg, "Expansion of BRICS: A Quest for Greater Global Influence?" *European Parliamentary Research Service*, March 2024.

‡According to a 2024 U.S. Department of Justice press release, four Chinese nationals were indicted and charged with several crimes for illegally exporting and smuggling U.S.-origin electronic components used in UAVs and ballistic missiles to Iran. U.S. Department of Justice, *Chinese Nationals Charged with Illegally Exporting U.S.-Origin Electronic Components to Iran and Iranian Military Affiliates*, January 31, 2024.

Iranian media reports, China has supplied Iran with access to the BeiDou satellite navigation system, a rival to the U.S. GPS system, which could bolster drone and missile performance and targeting through its advanced navigation and communication system.*[164]

Chinese military equipment and components have allegedly been obtained by Hamas and the Houthis, highlighting the potential danger of Chinese products supporting the operations of non-state actors in the region. After October 2023, the Associated Press and the Israel Defense Forces reported that Hamas was using China-origin weapons in Gaza.[165] Although China claims it does not sell weapons to non-state actors, reports indicate the Chinese-made weapons may have been sold elsewhere in the Middle East and then smuggled to Hamas terrorists.[166] An investigation by Israeli Defense Forces found that Hamas has obtained advanced weapons and technology made in China, including cartridges and rifle sights for M16 assault rifles, automatic grenade launchers, and communication devices.[167]

Chinese components have also appeared in weapons used by Iran and its Houthi proxies in attacks on Saudi Arabia. Drones used in a September 2019 attack on two Saudi Aramco facilities claimed by the Houthis but attributed to Iran by the United States and a UN investigation were later revealed to be Shahed 131 drones, which utilize motors resembling the MDR-208 single rotor UAV engine, made by Beijing MicroPilot UAV Flight Control Systems, a Chinese company.†[168] Iran has supplied these and other UAVs and missiles to the Houthis for their attacks on targets across the Middle East.[169] While one Chinese military blogger has speculated that the Houthi rebels were potentially using Chinese missile technology previously shared with Iran, to date there has been no public evidence that the Chinese government is directly transferring weapons to the Houthis.[170] However there is evidence that weapons used by Houthi rebels contain Chinese-made parts.‡[171] Furthermore, in June 2024, the Treasury Department announced that Ali Abd-al-Wahhab Muhammad al-Wazir, a China-based Houthi-affiliated individual, played a "key role in procuring materials that enable Houthi forces to manufacture advanced conventional weapons inside Yemen."[172] He utilized his China-based company, Guangzhou Tasneem Trading Company Limited (Guangzhou Tasneem), a subsidiary of Hong Kong-based Tasneem Trading Company Limited, to obtain these items and ship them to Yemen.[173]

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*A 2015 Iranian media report stated that BeiDou was establishing ground stations in Iran and had signed an MOU with Iran Electronics Industries, a state-owned company owned by Iran's Ministry of Defense and subject to U.S sanctions. *Mehr News Agency*, "Chinese BeiDou BDS to Transfer Satellite Tech. to Iran," October 18, 2015; U.S. Department of the Treasury, *Treasury Designates Iranian Military Firms,* September 17, 2008.

†The Ukrainian military claims Russia is also sourcing engines from Beijing MicroPilot UAV Flight Control Systems for its Iranian Shahed attack drones. The *Wall Street Journal* reports that Russia has launched more than 4,000 Iranian Shahed drones. Benoit Faucon et al., "The Russian Drone Plant That Could Shape the War in Ukraine," *Wall Street Journal*, May 28, 2024.

‡The UN panel report that identified the Chinese-origin components also identified UAV and missile components sourced from Iran, Japan, Belarus, Germany, and the Czech Republic via a network of intermediaries. Farzin Nadimi, "The UN Exposes Houthi Reliance on Iranian Weapons," *Washington Institute for Near East Policy*, February 13, 2020.

China Increases Purchases of Sanctioned Oil from Iran

China has increased imports of Iranian oil in recent years by constructing a parallel network of shippers, refineries, and financial institutions to obscure imports and bypass U.S. sanctions.[174] Taken in conjunction with its increased purchases of sanctioned Russian oil, China is constructing what researchers at the Atlantic Council have dubbed an "axis of evasion" that undermines U.S. sanctions, profiting in the near term from discounted energy imports while establishing an alternative trade and payment system that may buffer it from future economic sanctions.[175] According to estimates by the nonprofit United Against Nuclear Iran and others who track data on Iranian oil exports, China imported 1.1 million barrels per day (bpd) from Iran in 2023, up 9 percent from the year prior.[176] If correct, this would mean China is now responsible for purchasing nearly 90 percent of Iranian crude exports,* which would account for nearly 10 percent of total Chinese crude imports, making Iran the fourth-largest supplier to China in 2023, just behind Iraq.[177] Chinese customs did not report any oil imports from Iran in 2023, so it appears oil is imported through transshipment facilities in Malaysia, the UAE, and Oman and relabeled as "Middle Eastern" oil.[178] China is estimated to have imported 1.4 million bpd on average through the first five months of this year.[179]

The sanctioned oil is transported by a so-called "dark fleet" of older tankers that use a variety of tactics to avoid detection, such as turning off signaling systems when making Iranian port calls, sending fake location information (known as "spoofing"), and conducting ship-to-ship transfers outside authorized transfer zones using the cover of bad weather to hide operations, a practice that heightens the risk of an environmentally costly accident.[180] According to testimony before the Commission by Erica Downs, senior research scholar at Columbia University's Center on Global Energy Policy, independent refineries known as "teapots" purchased all the Iranian crude oil imported into China in 2023.[181] China's large state-owned oil companies have curtailed their involvement in purchasing and processing Iranian oil since late 2019 after the re-imposition of sanctions following the U.S. withdrawal from the Joint Comprehensive Plan of Action.[182]

Congress and the Administration have taken a number of recent actions intended to address the issue. Since 2021, over 180 entities and individuals have been sanctioned for their involve-

*Iran's estimated revenue from oil exports was $12 billion over the first three months of the government's fiscal year starting in March 2024. For comparison, the country's gross domestic product in 2023 was $401.5 billion and the government's budget for 2024 is estimated to be $49.2 billion, about equivalent to expected total revenue from oil exports. In other words, China's oil purchases from Iran appear to equate to nearly 90 percent of Iran's entire government budget, though due to associated costs oil export revenue is believed to directly fund 45.4 percent of the government's operating budget. Given the scale of China's oil purchases from Iran, and lack of alternative buyers due to sanctions, Beijing appears to have immense capacity to influence Tehran. There is little evidence that China has used this leverage with respect to Iran's support for proxies in the Middle East—such as Houthi attacks on shipping (other than perhaps protecting Chinese flagged ships) and Hezbollah—or Iran's direct attacks on Israel. *Iran International*, "Iran Faces 26% Oil Revenue Deficit Despite Surging Exports," October 5, 2024; Dalga Khatinoglu, "Iran's Oil Exports Hit a 5-Year High in 2024," *Iran International*, July 1, 2024; World Bank Group, "Iran, Islamic Rep."; *Iran International*, "Iran's Government Plans to Increase Taxes amid Economic Crisis," November 11, 2023.

China Increases Purchases of Sanctioned Oil from Iran—*Continued*

ment in the trade of sanctioned Iranian oil.[183] Congress included two sanctions measures as part of the supplemental appropriations package enacted in April 2024: (1) the Stop Harboring Iranian Petroleum (SHIP) Act directs the president to sanction foreign persons involved in activity related to Iranian oil, to include refineries and port owners and operators; and (2) the Iran-China Energy Sanctions Act of 2023 expands the definition of "significant financial transactions" in the fiscal year (FY) 2012 National Defense Authorization Act to include those by Chinese financial institutions that involve Iranian oil exports, and it also directs the president to make an annual determination on whether financial institutions have engaged in such activity.[184]

China's Economic, Trade, and Investment Interests in the Middle East

China replaced the United States as the Middle East's largest trade partner in 2010, and China-Middle East economic ties have deepened in the years since.[185] Economic relations feature prominently in China's engagement with countries in the region, with Chinese companies increasing their physical presence in key logistical nodes of the global supply chain and seeking to shore up access to critical resources.[186] In January 2016, the State Council of the People's Republic of China presented an *Arab Policy Paper* that outlined its priorities and approach to economic cooperation with key Middle Eastern countries and served as a template for policy toward most of the region.[187] The paper called for establishment of a "1+2+3 cooperation pattern" with energy cooperation at the core; infrastructure construction and expanding trade and investment as the "two wings"; and nuclear energy, space satellites, and new energy as "three breakthroughs" that together would be the defining elements of relationships with Arab countries.[188] Based on China's behavior in the region and these expressions of its plans, it seems likely that in the short to medium term China will continue to assign top priority to ensuring steady access to the region's energy resources and will seek to benefit from increased market access and infrastructure contracts.[189] In the long term, as a transition away from fossil fuels alters the region's position in global trade, China will seek to evolve cooperation with key countries in the region to advance toward its goals of establishing emerging technologies like artificial intelligence (AI), advanced computing, and clean energy as central economic growth drivers.[190]

Trends in Trade and Investment

China has become the largest trading partner for many countries in the region, with growth in total trade and direct investment between China and the Middle East outpacing that of China with the rest of the world over the past five years.[191] In 2022, China was the top origin country for goods imports for ten out of 15 Middle Eastern countries, an increase from five a decade earlier and zero in 2002.[192]

As an export destination for goods, China ranked first for six countries in 2022, up from three in 2012 and zero in 2002.[193]

Energy Relations

Energy trade remains a mainstay of China-Middle East economic engagement, comprising roughly 85 percent of total exports from the region to China by value in recent years.[194] China became a net importer of crude oil in 1993; since that time, imported energy from the Middle East has provided a sizable share of the fuel China consumes.[195] While exports from Persian Gulf countries* to the United States and the EU have trended downward since the early 2000s, China's crude oil imports from the region have increased from about 34 million metric tons at the turn of the century to about 257 million metric tons in 2021 (see Figure 1).[196] The Middle East has consistently accounted for 40–50 percent of China's total oil and gas imports dating back to the mid-1990s.[197] China's imports of hydrocarbons from the region have continued to grow in recent years, as have two-way investments and long-term agreements to lock in consistent supply over the coming decades.[198] However, as China and key suppliers in the Gulf move to transition segments of their economy to clean and renewable energy, the dynamic of dependency is set to shift, where China may become a supplier of batteries, solar, and nuclear energy systems to the region and Gulf countries may find themselves in competition with Chinese firms to build out energy infrastructure in third countries.[199]

Trade of Hydrocarbons Remains Substantial

China's rapid rise, vast population, and industrialization have made it the world's largest consumer of energy, largest producer and consumer of coal, and largest emitter of carbon dioxide from burning hydrocarbons.[200] In 2021, coal provided the majority of China's energy for consumption (55 percent), followed by petroleum (19 percent), natural gas (9 percent), hydropower (8 percent), non-hydro renewables (7 percent), and nuclear energy (2 percent).[201] For oil and natural gas, China remains heavily reliant on imports, primarily from Russia and the Middle East.†[202] Virtually all of China's energy imports from the region are shipped through key maritime chokepoints, including the Strait of Hormuz and the Strait of Malacca, a point of concern for PLA military planners.[203] (For further discussion on China's oil stockpiling and related measures, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.")

Oil Exports to Chinese Market Steadily Rise

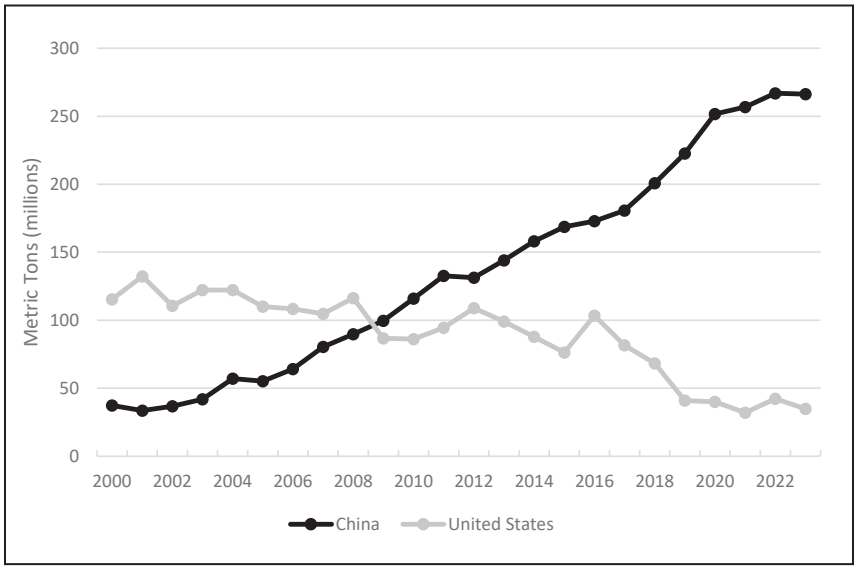
With limited domestic production capacity of its own, China relies on imported oil to power large parts of its transportation and indus-

*The Persian Gulf includes eight countries—Bahrain, Iran, Iraq, Kuwait, Saudi Arabia, Oman, Qatar, and the UAE—which together sit atop half the world's known oil reserves. Though all but Iran are members of the Arab League, the "Gulf Arab states" or "Arab Gulf" often also excludes Iraq, referring solely to the six Gulf Cooperation Council (GCC) members. RAND Corporation, "Persian Gulf Region," 2024; Simon Henderson, "Understanding the Gulf States," *Washington Institute for Near East Policy*, March 31, 2014.

†Oil and liquified natural gas (LNG) make up the majority of imports to China from Middle Eastern countries, from 99 percent of total dollar value of imports from Iraq on the high end to 69 percent with the UAE on the low end in 2023. Erica Downs, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China and the Middle East*, April 19, 2024, 1.

trial sectors.[204] China's imports of crude oil nearly doubled over the past decade from just over six million bpd in 2014 to 11.3 million bpd in 2023, a record high.[205] According to Chinese customs data, flows from the Middle East over this time period increased from 3.2 million bpd in 2014 to 5.2 million bpd in 2023, 46 percent of China's total crude imports.[206] Saudi Arabia became China's largest crude oil supplier in 2018 and remained so until Russia replaced it in 2023 due to China's substantial purchases of discounted oil subject to sanctions in other markets.[207] In 2023, Russia supplied 19 percent of China's imported crude oil, followed by Saudi Arabia (15 percent), Iraq (11 percent), Malaysia (10 percent), and the UAE and Oman (both 7 percent).[208] However, it is believed that a significant portion attributed to Malaysia, the UAE, and Oman is relabeled oil from Iran.[209] For instance, Malaysia's total crude oil production in 2023 was 501,000 bpd, yet Chinese customs reported importing 1.1 million bpd, suggesting a sizable portion of the difference was oil transshipped through the country.[210]

Figure 1: Crude Oil Imports from Persian Gulf Countries, 2000–2022



Source: UN Comtrade database.
Note: Persian Gulf countries include Bahrain, Kuwait, Iran, Iraq, Oman, Saudi Arabia, Qatar, and the UAE.

Saudi Arabia has sought to increase investment and joint ventures in downstream refining capacity with Chinese petrochemical companies to lock in long-term purchase contracts as global demand for traditional crude oil products like gasoline and diesel is set to decline. The Saudi government is prepared to spend $100 billion by 2030 on downstream energy products—such as petrochemical products used in textile manufacturing—as part of the National Investment Strategy, which seeks to diversify the economy away from reliance on traditional crude oil exports, also detailed in the Saudi national plan "Vision 2030."[211] Since 2022, Saudi Arabia's state oil

company Saudi Aramco* has embarked on a campaign to sign major investment deals in China toward achieving the stated goal of converting four million bpd† of crude oil to chemical products by 2030.[212]

Table 2: Recent Announced Investment between Saudi Aramco and Chinese Partners

Date of Announcement	Chinese Company	Planned Investment	Status
April 22, 2024	Hengli Petrochemical	Aramco to take 10 percent stake in company	Negotiations ongoing
January 2, 2024	Rongsheng Petrochemical	Cross-acquisition talks: Rongsheng to acquire 50 percent stake in Aramco Jubail Refinery Co. (SASREF), and Aramco to take max 50 percent stake in Rongsheng's Ningbo Zhongjin Petrochemical complex	Negotiations ongoing
October 11, 2023	Shandong Yulong Petrochemical Co.	Aramco to take 10 percent stake in Shandong Yulong	Negotiations ongoing
September 27, 2023	Shenghong Petrochemical	Aramco to take 10 percent stake in company	Negotiations ongoing
March 27, 2023	Rongsheng Petrochemical Co.	Aramco purchased 10 percent stake for $3.4 billion (Aramco's largest foreign acquisition ever)[213]	Completed in July 2023
March 11, 2023	Huajin Aramco Petrochemical Co. (HAPCO)	$12 billion joint venture where Aramco holds a 30 percent stake	Completed in March 2023

Source: Fanny Zhang, "Saudi Aramco Eyes Stake in Hengli Petrochemical; Prowls for More China Investments," *Independent Commodity Intelligence Services*, April 23, 2024.

China Diversifies Energy Imports with Natural Gas Contracts

China has steadily increased the portion of natural gas in its energy consumption profile, and in recent years it has inked long-term contracts with top producers such as Qatar to guarantee supply over the coming decades. In 2022, Chinese consumption of natural gas stood at 364.6 billion cubic meters (bcm), the third largest behind the United States (881 bcm) and Russia (408 bcm).‡[214] Even though China's imports provide only a minority of the country's gas con-

*Saudi Aramco is the largest energy company in the world and one of the largest global companies overall, with a market capitalization of $1.84 trillion. In 2023, the company reported revenue of $440 billion and profit of $121 billion, down from a record $161 billion in 2022, which was the largest ever by a publicly traded company. Julie Pinkerton, "The 10 Most Valuable Companies in the World by Market Capitalization," *U.S. News*, June 12, 2024; Jon Gambrell, "Aramco Announces $121 Billion Profit in 2023, Saudi Oil Giant's 2nd Highest on Record," *PBS News*, March 10, 2024.

†In 2023, Saudi Aramco had an output of 12.8 million bpd. Jon Gambrell, "Aramco Announces $121 Billion Profit in 2023, Saudi Oil Giant's 2nd Highest on Record," *PBS News*, March 10, 2024.

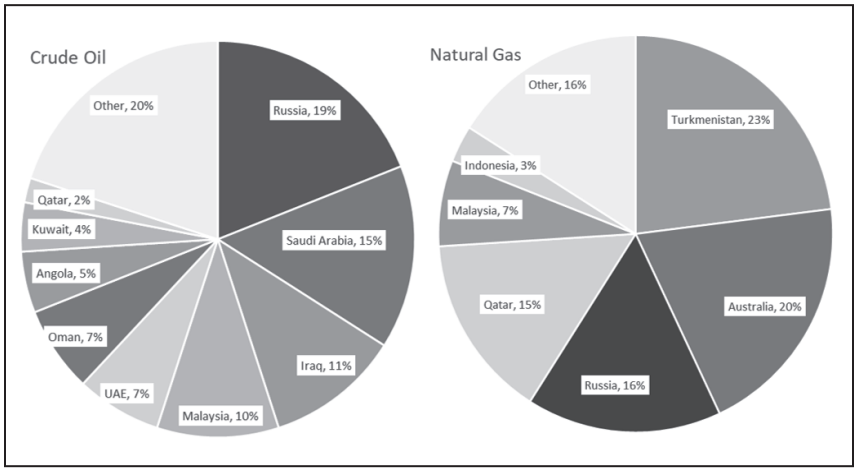
‡China is estimated to have the sixth-largest proven natural gas reserves in the world at 297 trillion cubic feet (tcf), behind Russia (1,321 tcf), Iran (1,134 tcf), Qatar (871 tcf), the United States (447 tcf), Turkmenistan (480 tcf), and ahead of Saudi Arabia (213 tcf). British Petroleum, "BP Statistical Review of World Energy," 2021, 34.

sumption, it topped Japan as the number one importer of liquid natural gas (LNG) in 2021, importing over 100 bcm that year before falling back to the number two slot in 2022.[215]

Positioned in the Persian Gulf atop the world's largest natural gas field, Qatar is one of the top exporters of LNG, consistently supplying about 80 million metric tons to world markets annually.[216] Qatar was the second-largest source for LNG to China in 2023, supplying 16.7 million tons, or about a quarter of LNG imports.[217] According to testimony from Dr. Downs, this is set to increase following separate deals signed in late 2022 and 2023 between QatarEnergy and two Chinese state-owned energy giants, Sinopec and China National Petroleum Corporation (CNPC).[218]

Gas imports from Qatar will continue to play a critical role in China's natural gas mix. With consumption projected by Chinese officials to increase, decision-makers in Beijing seek to expand domestic production capacity while maintaining a stable and diversified mix of imports from trusted suppliers.[219] The *2023 Natural Gas Development Report* issued by China's National Energy Administration (NEA), CNPC, and the State Council, among others, for the first time specified the goal of continuing to meet above 50 percent of demand with domestic supply.[220] The 14th Five-Year Plan calls for national storage capacity of 55 to 60 bcm by 2025, and Chinese shipbuilders are increasing production of large LNG carriers from 7 percent of global orders in 2021 up to 30 percent in 2022.[221] Analysis coauthored by hearing witness Dr. Downs predicts China will seek to secure a baseline of domestic production and pipeline imports while maintaining the ability to dial up or dial down LNG imports in response to global gas prices.[222]

Figure 2: Chinese Imports of Crude Oil (2023) and Natural Gas (2022) by Source Country



Source: China's General Administration of Customs; U.S. Energy Information Administration, *China*, November 14, 2023.

Note: Imports from Iran are not reported in official statistics, though it is estimated that Iranian crude oil shipments were equivalent to those from Iraq for 2022, with large portions transshipped and attributed to Malaysia, Oman, and the UAE.

China Positions Itself on Clean Energy Investment

China has become a leading manufacturer of clean energy technologies at the same time wealthy Gulf states aim to transition their economies from dependence on fossil fuel exports, presenting natural opportunities for increased integration of Chinese companies in the region.[223] The International Energy Agency estimates renewable energy capacity to grow by 62 gigawatts (GW) between 2023 and 2028 in the Middle East and North Africa (MENA) region, more than three times the growth during the previous five-year period.[224] And an estimate by UBS Investment Bank projects total annual energy-related trade between China and the region to increase by $423 billion by the year 2030, with renewables accounting for $77 billion of this additional trade.[225]

Nuclear

Chinese construction companies have partnered with Gulf countries to build nuclear reactors. The UAE leads the region in adopting nuclear power, with its multi-reactor Barakah power plant coming partially online in 2020. The first nuclear power plant in the Arab world, it is expected to meet up to 25 percent of the country's daily energy needs once fully operational.[226] In May 2023, the Emirates Nuclear Energy Corporation reached agreements with three Chinese nuclear energy companies to support its nuclear energy program, and Saudi Arabia is reportedly considering similar partnerships with China to build reactors capable of supplying 17 GWe* of nuclear capacity by 2040.[227]

Batteries/Electric Vehicles

Chinese automotive companies are rapidly expanding market share in the region as adoption of electric vehicles (EVs) is set to rise. The market for EVs in GCC countries is estimated to be $4.4 billion in 2024 and is expected to grow to $10.4 billion by 2029.[228] Chinese carmakers of all types have made rapid inroads in the Gulf, going from less than 1 percent market share for new vehicle sales in 2017 to 12 percent in 2022, paving the way for expansion of EV sales as adoption rates increase.[229] In the UAE, Chinese EV sales were up 92 percent year-over-year during the first five months of 2024, admittedly from a small base.[230] China's lithium battery exports have also accelerated in recent years to GCC countries, increasing 26 percent year-over-year in 2022 and another 99 percent in the first three quarters of 2023.[231] In Israel—where the EV market is projected to grow from $3 billion in 2023 to $12.9 billion by 2032—Chinese EVs accounted for 68 percent of all EV sales from January to May of 2024.[232]

Saudi Arabia has staked out a path to become an EV manufacturing hub, with the country's largest sovereign wealth fund, Public Investment Fund (PIF), taking a majority ownership position in California-based luxury EV maker Lucid Motors in 2021, paving the way for opening the first manufacturing facility in the country in

*GWe is an abbreviation for "gigawatt electric," a unit of electrical output equivalent to 1,000 megawatts or 1 billion watts. In 2022, 94 operable nuclear reactors in the United States had a combined net capacity of 97.0 GWe, producing 18.6 percent of the country's electricity; China had 56 reactors with a combined net capacity of 54.4 GWe, producing 5 percent of the country's total electricity. World Nuclear Association, "Nuclear Power in the World Today," September 11 2024.

2023.[233] The UAE has also moved to build an EV manufacturing sector through collaboration with Chinese automakers.[234] In February, it was reported that Shanghai-based carmaker Nio had agreed to license its technology to Forseven, an EV startup owned and controlled by Abu Dhabi investment fund CYVN Holdings.[235] CYVN Holdings became the single-largest shareholder in Nio after a $2.2 billion dollar investment in December 2023, bringing its stake in the company to 20.1 percent.[236] In July 2024, China's largest EV maker BYD agreed to a $1 billion deal to build a manufacturing plant in Turkey that reportedly will produce 150,000 vehicles annually.[237] (For more information on U.S.-China technology competition relating to battery technology, see Chapter 3, "U.S. China Competition in Emerging Technologies.")

Solar

The Middle East is set to become a sizable market for Chinese solar exports as countries scale up deployment of renewable energy. Solar photovoltaic (PV) is expected to account for 85 percent of increased renewable energy capacity in the Middle East between 2023 and 2028.[238] China's Silk Road Fund has a 24 percent equity interest in the world's largest solar energy plant in Dubai, in partnership with the Dubai Electricity and Water Authority (DEWA).[239]

Clean Hydrogen

Nascent technology being funded by Gulf countries as part of their national transition strategies presents collaborative opportunities for Chinese companies in new energy systems. Riyadh-headquartered ACWA Power is a private company that is a major developer and operator of power generation and desalination plants across the Middle East, including solar and green hydrogen projects.[240] The company has a number of partnerships and joint ventures with Chinese guidance funds and state-owned enterprises, including the Silk Road Fund, Power Construction Corporation of China, State Power Investment Corporation, and Bank of China.[241]

Economic Statecraft

Geographically positioned at a crossroads for global trade, the Middle East has become a priority for Chinese transportation and trade infrastructure investment in recent years. Every country in the region except Israel and Jordan have signed a memorandum of understanding (MOU) to participate in BRI.[242] However, China's investments in the region extend beyond traditional development finance and are intended to secure access to energy resources and trade infrastructure like ports in key locations. In testimony before the Commission, Karen Young, senior research scholar at Columbia University's Center on Global Energy Policy, described China's statecraft objective as follows: "The goal for China is not to be a security umbrella, a regional alliance or solely to gain a market for exports. China is after energy resources and strategic locations for its trade and transport security, which means it is invested in certain choke points in the Middle East, Horn of Africa, and Indian Ocean."[243]

Port and Special Economic Zone Investments

In efforts to become a preeminent trade and logistics hub for both the European market and emerging markets in Asia and Africa, Gulf countries have been expanding port infrastructure positioned along strategic waterways. Chinese companies have been increasingly involved in construction and operation of port infrastructure throughout the region. Notable investments include:

- *Suez Canal (Egypt):* Chinese private and state-owned companies have signed numerous deals seeking to acquire operating concessions and ownership stakes in port and industrial activity along the Suez Canal, through which 12 percent of the world's trade flows annually.[244] The Tianjin Economic-Technological Development Area (TEDA) Suez Economic and Trade Cooperation Zone is a 176-square-mile industrial area built jointly by the governments of China and Egypt.[245] The project was announced in 2000, undergoing significant expansion in 2016 with substantial Chinese investment after being held up as a model BRI project.[246] Last year, Chinese companies signed deals worth more than $8 billion to operate and manage assets in the Suez Canal Economic Zone.[247] With respect to ports, Hong Kong-based Hutchison Ports invested more than $1.5 billion for up to 38-year operating concessions in Egyptian ports, including operation of a terminal at Abu Qir Naval Base.[248] Shanghai-based COSCO Shipping Lines Co. acquired a 20 percent stake in East Port Said at the north end of the canal and a 25 percent stake in a terminal at Ain Sokhna Port on the south end.[249]
- *Port of Duqm (Oman):* Strategically positioned near the Strait of Hormuz and the Bab-al-Mandeb, this port is owned by the Government of Oman and operated by a government entity.[250] The Chinese consortium Oman Wanfang committed to a $3.7 billion investment over 30 years to build a Special Economic Zone.[251]
- *Port of Aden (Yemen):* China Merchants Port Holdings is one of the firms involved in operations of this port.[252]
- *Khalifa Port (UAE):* In 2021, U.S. intelligence agencies warned of suspected Chinese projects to construct military facilities at this port 50 miles north of Abu Dhabi.[253] The UAE maintained that the construction carried out by COSCO was commercial in nature, though it announced it would halt the project shortly thereafter following stern warnings from U.S. officials.[254] (For more on the potential use of dual-use facilities for military purposes, see "China's Military and Security Presence in the Region" later in this chapter.) In 2024, the China Harbor Engineering Company was awarded a contract to upgrade the Ras al Khaimah Saqr Port, another UAE port north of Dubai.[255]

RMB and Alternative Payments Make Inroads, Albeit Minor

China seeks to protect itself from exposure to potential future U.S. sanctions and views energy markets and trade with countries in the Middle East as one avenue through which it might dislodge the U.S. dollar's dominance in international finance. (For more on

China's efforts to create an alternative to the dollar-based trade and financing system, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.") In the run-up to the 25-year strategic partnership agreement signed in 2021, the central bank of Iran listed the renminbi (RMB) as the Islamic Republic's main reserve currency.[256] The adoption of the RMB by Iran for a substantial portion of its foreign exchange reserves and cross-border payments is unique given the imposition of harsh sanctions banning Iranian banks from the SWIFT payment system since 2018.[257] There are currently practical limits to these efforts, however. China has pushed RMB-denominated oil contracts, cross-border payment agreements, and currency swap lines with countries in the region, most recently signing a three-year currency swap agreement with Saudi Arabia worth nearly $7 billion.[258] The currencies of all GCC countries except Kuwait are pegged to the dollar, and this along with China's capital controls and the decades-old oil-for-security partnership with the United States creates a strong incentive for Arab Gulf countries to continue pricing their energy exports and accruing foreign exchange reserves in dollars.[259] According to testimony from Dr. Downs before the Commission, no country in the region besides Iran has accepted RMB for payment for energy exports, though Iraq and the UAE have both shown interest in introducing the RMB for non-oil private sector cross-border payments.[260]

BRI and Development Finance Expands, Bucking Global Trend

As China has pulled back development financing globally in recent years, in the Middle East such investment has continued and in some places increased (see also the "Digital Silk Road" section below). Between 2005 and 2022, 266 projects were initiated across the region under the umbrella of BRI, according to data collected by the International Institute for Strategic Studies.[261] With its extensive oil reserves and participation in BRI, Iraq has become a top destination for Chinese energy and infrastructure investment.[262] In 2021, Iraq was the top recipient of BRI funding, receiving about $10.5 billion.[263] Iraqi oil exports to China increased 47.5 percent from 2021 to 2022, and as of the start of this year, two-thirds of Iraq's current oil production is operated and overseen by Chinese companies.[264]

The United States has coordinated a program to counter China's BRI and establish alternate trade routes through the Middle East. The Partnership for Global Infrastructure and Investment (PGII) was announced at the G7 summit in Japan in May 2023.[265] Under the auspices of this framework, the United States, India, the EU, France, Germany, Italy, Saudi Arabia, and the UAE signed an MOU five months later to build two economic corridors connecting South Asia and Europe via the Middle East, branded the India-Middle East-Europe Economic Corridor (IMEC).[266] The proposal calls for building rail and shipping lines to connect existing infrastructure to move goods between India, the UAE, Saudi Arabia, Jordan, Israel, and Europe.[267] Telecommunications lines, undersea cables, and a clean hydrogen pipeline are also envisioned in the proposal.[268]

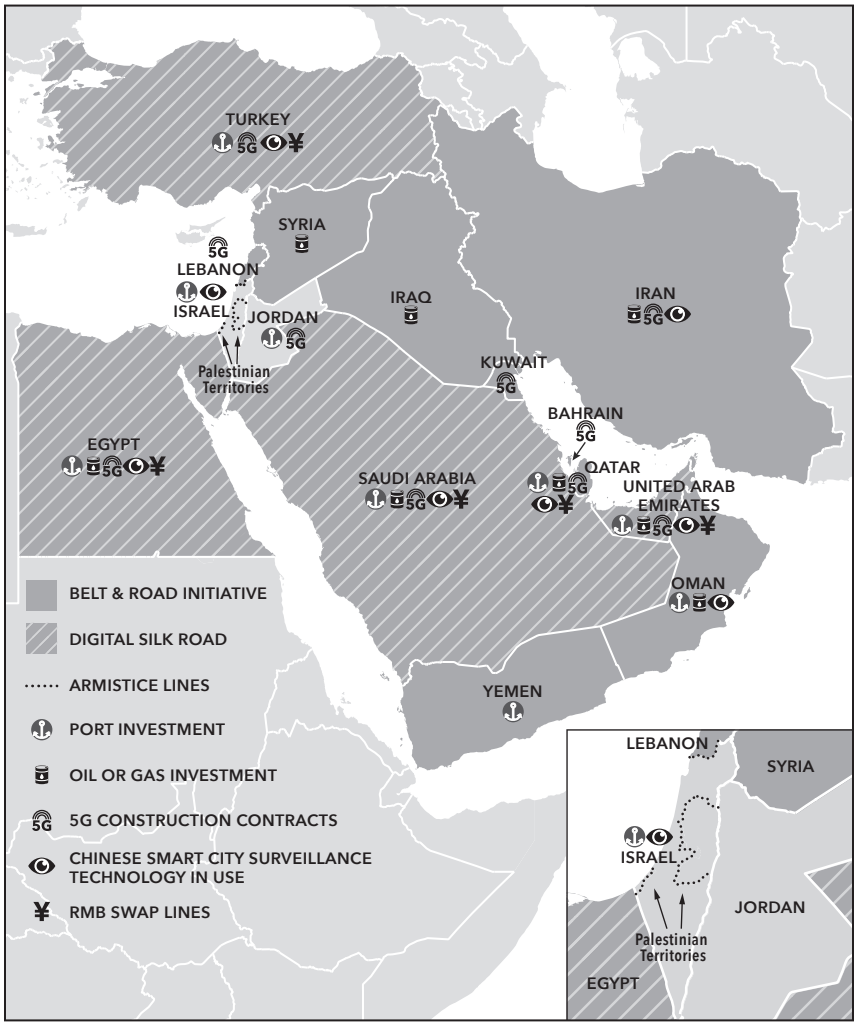
China-Middle East Technology Relations

As the technology competition between the United States and China has intensified, the Middle East is emerging as a key stakeholder and potential conduit for Chinese end users to gain access to leading-edge technology. Chinese technology companies have had market presence in the region for decades and are working to deploy telecommunications equipment and other underlying technology infrastructure across the region in both wealthy and underdeveloped countries. Emerging technologies like AI and advanced computing play a central role in the ambitious national strategies of GCC countries as they seek to diversify their economies away from reliance on fossil fuel. Countries like Saudi Arabia, the UAE, and Qatar have dedicated massive investment to build up domestic technology industry and innovation hubs. As demand for technology rises—including sensitive tech subject to U.S. export restrictions—the United States and China will be in competition for market access and network effects across the region.

Digital Silk Road

The Middle East is integral to China's Digital Silk Road (DSR), a BRI initiative that seeks to entrench Chinese technology companies in foreign markets and digital infrastructure.[269] The notion was first presented as the "information silk road" in a 2015 white paper outlining an expanded vision of BRI that would seek to construct cross-border fiberoptic cables and telecommunication networks, intercontinental underwater cables, and satellite information channels.[270] The DSR has since evolved to cover 5G cellular infrastructure, cloud computing and data centers, smart city technology, and e-commerce and digital payment services.[271] Consistent with its approach to BRI, China broadly defines DSR by design in order to lump a range of overseas investment projects and initiatives under the umbrella of a seemingly coherent development strategy. Mohammed Soliman, director of the Middle East Institute's Strategic Technologies and Cyber Security Program, observed, "By utilizing technology statecraft, Beijing aims to establish China's geopolitical footprint in the region without resorting to conventional military expansion."[272] As of late 2023, at least 17 countries have signed formal MOUs to join the DSR globally, among them Egypt, Turkey, Saudi Arabia, and the UAE.[273]

Figure 3: China's Economic and Technology Interests in the Middle East



Sources: Various.[274]
Note: Smart City surveillance technology encompasses a variety of surveillance technologies (such as CCTV cameras, recording and video management systems, and facial recognition) that make data from a city's core management systems available to government entities. For more see Katherine Atha et al., "China's Smart City Development," *SOS International LLC* (prepared for the U.S.-China Economic and Security Review Commission), January 2020, 61.

Huawei and Others Deeply Embed in Technology Infrastructure

Chinese telecommunications companies Huawei and ZTE have moved aggressively to expand their presence in the Middle East and developing countries more broadly since coming under scrutiny from the United States and its allies and partners over data security concerns.[275] As of early 2023, Huawei had contracts with 11 Middle Eastern countries to build out 5G infrastructure, including Egypt, Turkey, Iran, Lebanon, Jordan, and all six GCC countries.[276] Devel-

oping countries seeking to modernize their telecommunications networks have been attracted to the low-cost products offered by Huawei and ZTE that still perform relatively well compared to equipment from non-Chinese competitors.[277] Huawei has been deeply involved in Egypt for decades, establishing its North African headquarters in Cairo in 1999.[278] In 2018, Huawei and state-controlled Telecom Egypt signed a $200 million financing agreement backed by the Bank of China and China Export & Credit Insurance Corporation (Sinosure) to fund the establishment of a national 4G network.[279] And despite previous false starts, in 2024 Telecom Egypt secured the exclusive license from the government worth $150 million to provide 5G services enabled by Huawei technologies.[280] Huawei has signed similar agreements to collaborate on 5G buildout with Zain in Saudi Arabia, Etisalat in the UAE, Turk Telekom in Turkey, and VIVA in Kuwait.[281]

Beyond cellular networks, Chinese firms have been involved in the construction of another critical piece of the IT infrastructure in the region: data centers. The Gulf still lags behind the United States, Europe, and Asia in terms of total data centers and data center capacity. Saudi Arabia currently has 60 data centers operating with 123 megawatts (MW) of capacity, while the UAE has 52 centers operating with 235 MW as of the end of 2023.[282] For comparison, as of 2022 Germany has 1,060 MW of data center capacity, China has 4,818 MW, and the United States has 17,000 MW.[283] However, both Saudi Arabia and the UAE are moving to rapidly expand capacity. In late 2021, Saudi Arabia's Ministry of Communications and Information Technology set a goal of reaching 1,300 MW of data center capacity by 2030, and in the UAE another 343 MW of capacity is currently planned or under construction.[284] Chinese companies Huawei, Lenovo, and Inspur have served as IT infrastructure providers for equipment used in data centers, and cloud service providers Alibaba and Tencent have staked out operation of data facilities in both countries.[285] (For a discussion of total compute, including cloud services, as a key facet of U.S.-China technology competition in AI, see Chapter 3, "U.S.-China Competition in Emerging Technologies.")

Emerging Technology

The expanding collaborative regional innovation landscape around emerging technologies like AI, advanced computing, and biotechnology has increased the potential for transfer of cutting-edge, dual-use technology. Wealthy Gulf states in particular view increased technological linkages with China as an opportunity to accelerate digital initiatives posited in economic diversification plans like Saudi Arabia's Vision 2030.[286] Gulf sovereign wealth funds have been major investors in tech startups around the world for over a decade, yet now they have set goals to develop domestic technology industries modeled on Silicon Valley as part of their national diversification strategies.[287] China may be able to use its role as a partner in building these burgeoning ecosystems to both expand its influence in the region and evade export controls imposed by the United States and other Western countries to obtain sensitive dual-use technology.

Artificial Intelligence Opens New Front of Tech Competition

Technology partnerships between Chinese companies of concern and AI startups in the Middle East present a new vector of vulnerability of sensitive technology and data transfer.* The wealthy Arab Gulf countries have made clear their ambition to become AI leaders, allocating massive investment into planned construction of AI infrastructure and regional innovation hubs. The consultancy PwC estimates the economic contribution of AI will be 13.6 percent of gross domestic product (GDP) in the UAE and 12.4 percent in Saudi Arabia by 2030, behind only China and the United States.[288] Of the 96 strategic goals included in Saudi Arabia's Vision 2030, some 70 percent involve using data and AI.[289] The UAE stood up an Artificial Intelligence and Advanced Technology Council in January 2024 to guide AI policy, and the following month the country's largest listed firm, International Holding Co., appointed an AI chatbot to an observer post on its board.[290] The sheer amount of resources—both capital and energy—required to build data processing capacity that enables cutting-edge applications of AI are only accessible to a handful of actors worldwide, yet they are two resources abundant in Saudi Arabia, the UAE, and Qatar.

Gulf Sovereign Wealth Funds Make Big Bets on AI

A frenzy of deal-making has commenced between Gulf funds and AI companies in China and elsewhere since the launch of ChatGPT-3 in November 2022. Saudi Arabia's Public Investment Fund (PIF) was the most active investor among the world's sovereign wealth funds in 2023, investing $31.6 billion across 49 separate deals, an increase of 33 percent from 2022.[291] As of March 2024, the PIF had $925 billion in assets under management, up from $480 billion in 2022 and putting it on track to meet its ambitious target of $2 trillion by 2030.[292] Investing in emerging technology has been a central pillar of the PIF's strategy to grow its portfolio and advance priorities outlined by Vision 2030.[293] In 2017, the PIF was the top investor in the SoftBank Vision Fund—the world's largest technology venture capital fund—providing $45 billion of the initial $100 billion in capital alongside other investors such as Japan's SoftBank, the Emeriti sovereign wealth fund Mubadala, Apple, Foxconn, and Qualcomm.[294] The Vision Fund has recently announced it is pivoting toward strategic investment in AI and semiconductors, with SoftBank executives pronouncing their size will enable them to create an ecosystem of AI startups that can pool resources and rapidly scale to outcompete other investors.[295] Notable investment deals relating to China include:

- *Prosperity7 Ventures investment in Zhipu AI:* In May 2024 the *Financial Times* reported that the technology venture capital division of Saudi Aramco called Prosperity7 had invested in Chinese generative AI startup Zhipu AI.[296] Though details of the deal were not made public by either party, Prosperity7 was reportedly a minority investor in a $400 million funding round that valued Zhipu at roughly $3 billion.[297] This is the first instance of a foreign investor backing a Chinese generative AI

*For more on China's ambitions in AI and the U.S.-China competition in the space, see Chapter 3, "U.S.-China Competition in Emerging Technologies."

company endeavoring to rival industry leaders like OpenAI.[298] According to Gregory Allen, the director of the Center for Strategic and International Studies Wadhwani Center for AI and Advanced Technologies, the deal also raises questions on whether Zhipu will be able to access advanced compute powered by leading-edge semiconductors through operations in Saudi Arabia.[299] Founded in 2019, Zhipu AI is one of the more notable startups in generative AI and first to secure Chinese government approval for roll-out of its products, with backing from Alibaba Group and Tencent.[300]

- *Alat partnerships in AI and semiconductor industry:* Alat is a $100 billion investment firm launched by the PIF in February 2024 with the stated mission of developing Saudi Arabia's production and manufacturing of advanced technology industries, including AI and semiconductors.[301] Since then it has announced a number of deals with Chinese companies, including a $2 billion partnership with Lenovo to set up a regional headquarters and a new manufacturing base and a $200 million joint venture with surveillance company Dahua to develop its first overseas manufacturing operations.[302] In recognition of the increasingly precarious position his firm occupies amid the intensifying U.S.-China technology competition, Alat CEO Amit Midha made clear that partnering with U.S. firms was a top priority, stating that the fund would be willing to unwind its Chinese investments if asked by U.S. officials.[303]

U.S. Expands Technology Transfer Restrictions to Region

Increased concern surrounding Chinese end users' ability to bypass U.S. export controls through third countries has led to an expansion of the list of restricted markets for leading-edge products. In October 2023, the Commerce Department expanded semiconductor export controls to require licenses for sale of cutting-edge NVIDIA and AMD chips to certain Middle Eastern countries, including the UAE and Saudi Arabia, consistent with prior rules to prevent Chinese military end use.[304] In July 2023, the *Financial Times* reported the Committee on Foreign Investment in the United States (CFIUS) was investigating a planned $3 billion investment by the Abu Dhabi sovereign wealth fund Mubadala to buy a majority stake in New York-based Fortress Investment Group over concerns of technology transfer due to close ties between the emirate and China.[305]

Group 42 Exemplifies Challenges and Possible Approach to Technological Disentanglement

One of the leading AI companies in the Middle East moved to sever ties with Chinese firms in favor of expanded access to U.S. technology following pressure from both the Administration and Congress. Founded in 2018, Group 42 (G42) serves as a central conduit through which the UAE is implementing a broad set of technology initiatives, with a portfolio that spans AI, cloud computing, genomics, and self-driving vehicles.[306] The company is backed by the sovereign wealth fund Mubadala Investment Co.

Group 42 Exemplifies Challenges and Possible Approach to Technological Disentanglement—*Continued*

and chaired by Sheikh Tahnoon bin Zayed, national security advisor and brother to Abu Dhabi's crown prince.

In November 2023, the *New York Times* first reported on concerns raised by U.S. intelligence officials over G42's extensive ties with Chinese companies, including underlying hardware provided by Huawei, cooperation with BGI on genetic sequencing, and a $100 million stake in ByteDance carried out by its $10 billion private equity investment arm 42XFund.[307] High-level officials in the Administration reportedly told their Emirati counterparts that when it came to cutting-edge emerging technologies, the UAE needed to choose between partnership with the United States or China.[308] In January 2024, the House Select Committee on the CCP called for the Commerce Department to make a determination on whether G42 and its subsidiaries should be added to the Entity List due to potential transfer of dual-use technology to Chinese military end users.[309] Prior to the Select Committee's letter, G42's CEO said in an interview that his company cannot work with both sides, and in February it had sold holdings in Chinese companies and broken ties with hardware suppliers, including Huawei.[310]

Microsoft and G42 announced a $1.5 billion "strategic investment" agreement in April 16, 2024, following "close consultation" with both the U.S. and Emirati governments.[311] The deal afforded access to Microsoft cloud services for AI applications, a seat for Microsoft Vice Chair and President Brad Smith on the board of G42, and commitments by both parties to adhere to shared standards on AI development and technology sharing in the developing world.[312] Mr. Soliman said in testimony before the Commission that the agreement could serve as a model for engagement with the technology goals and companies of Middle East countries while establishing guardrails for U.S. technology and intellectual property in the region.[313] The UAE's ambassador to the United States said after the deal that the two country's governments were aligned in their vision for AI and would be "partners at the leading edge of advanced computing technologies."[314] White House technology advisor Tarun Chhabra described the deal as generally positive, saying the United States has an interest in moving countries in the Middle East away from close ties with companies like Huawei.[315]

Smart Cities and Surveillance Technology

The expertise of Chinese companies in deploying low-cost surveillance technologies at scale has presented an enticing value proposition for authoritarian regimes seeking innovative ways to tighten state control. The collective term "smart cities" commonly refers to the application of digital technologies in an urban setting to collect and analyze data in order to optimize municipal management and services.[316] While smart city technology can greatly improve efficiency and accelerate development in emerging market economies, it

also raises concerns over privacy and the export globally of China's repressive mass surveillance model used in Xinjiang Province and elsewhere throughout the country.[317]

Digital transformation of society has become a central pillar of the national diversification strategies of wealthy Gulf nations like Saudi Arabia, the UAE, and Qatar, who partner with a variety of foreign technology firms and providers of smart city technology.[318] According to the 2023 Smart City Index, a ranking of 141 cities along a variety of infrastructure and technology metrics, Abu Dhabi placed 13th in the world, Dubai 17th, and Riyadh 30th.[319] Projects under development like Saudi Arabia's planned futuristic city NEOM on the Red Sea intend to expand the integration of data to ease friction in daily life of residents, with city planners stating that the city will make use of 90 percent of collectible data, in comparison to current smart cities that typically utilize around 1 percent.[320] Huawei has signed contracts to provide cloud services for NEOM, as has Chinese AI company SenseTime.[321] In early 2024, Saudi fund Alat (a subsidiary of the PIF) announced a $200 million partnership with Dahua Technology, a leading Chinese surveillance equipment maker that was added to the Commerce Department's Entity List in 2022 for its role in surveillance of Uyghurs.[322] Elsewhere in the region, Chinese technology is being embedded in Egypt's New Administrative Capital, a planned city for 6.5 million residents under construction with sizable contribution from China State Construction Engineering Corporation (CSCEC).[323] Furthermore, in both Qatar and the UAE, Huawei is involved in new smart city development projects.[324]

China's Military and Security Presence in the Middle East

China has slowly been expanding its security footprint in the Middle East. It has built a military outpost in the region, is carrying out counterpiracy activities, participating in peacekeeping operations, and conducting military exercises and port calls with regional partners. Some analysts argue that China may view dual-use ports as a potential way to expand its security options in the region, as well. Although its military presence in the region remains limited and it has shown little interest in playing a larger role in regional security, these activities allow Beijing to bolster the PLA's operational experience and its reputation as a security partner. Lastly, China is targeting customers in the Middle East arms market, particularly through the sale of drones, to establish itself as an alternative option to the United States and Russia.

PLA Activities in the Middle East Boost Operational Experience

China's military footprint in the Middle East is relatively small at present, especially compared to the United States' presence, but it enables China to gain operational experience and could lay the foundation for a larger military presence in the region in the future.[325] In recent years, one of China's top military objectives in the region has been protecting its investments.[326] Toward this end, China has deployed PLA assets to participate in UN peacekeeping efforts, and it has potentially begun scoping locations for formal military bases

and commercial ports where the PLA Navy can dock its ships.[327] The PLA's efforts to operate more frequently in the Middle East could enhance China's efforts to project power and compete with the U.S. military on a global scale.[328] At this point in time, though, Chinese military operations in the region are marginal compared to those of the United States.

China Could Expand Basing Footprint in the Future

Though there are currently no official Chinese military bases in the Middle East, a logistics facility in Djibouti already serves as a PLA military outpost, supporting regional military operations and representing a potential model for expanding its security footprint in the future.[329] While the Djibouti installation is China's only official military outpost, Beijing could establish similar facilities in the future.*[330] A 2022 report on China's global basing ambitions by RAND Corporation researchers Cristina L. Garafola, Stephen Watts, and Kristin J. Leuschner analyzed the desirability and feasibility of potential PLA basing and access locations, assessing that countries including Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE were likely highly desirable locations for PLA basing and access points, although the feasibility of these varied.[331] The U.S. Department of Defense's 2023 report on *Military and Security Developments Involving the PRC* notes that China "probably also has considered other countries as locations for PLA military logistics facilities," including the UAE.[332] Additionally, according to a 2020 study written for the Commission by the open source intelligence company Jane's, two of the 18 sites that could serve as potential overseas PLA bases are located in the Middle East (both in Oman).[333]

Some analysts have argued that whether or not it adds actual bases, China may be able to rely on access to critical infrastructure in the Middle East as a way of expanding its power projection capabilities in the region.[334] Grant Rumley, the Meisel-Goldberger fellow at the Washington Institute for Near East Policy, argues that China will likely continue to augment its security presence in the Middle East through "a combination of modest military deployments and investments in critical infrastructure."[335] China's 2016 National Defense Transportation Law gives the PLA legal authority to commandeer civilian facilities, such as ports, in times of crisis.[336] As noted by Conor Kennedy, an assistant professor at the China Maritime Studies Institute, the 2016 law requires Chinese transportation enterprises overseas to provide logistical support for PLA forces operating overseas.[337] PLA experts have discussed the importance of "strategic strongpoints," a term that "generally refers to potential dual-use overseas facilities, including foreign commercial ports over which the PRC

*China primarily uses its Djibouti base to conduct antipiracy and freedom of navigation activities that are aimed at securing trade corridors in the region. The PLA Navy has utilized Djibouti as a logistics hub for its anti-piracy missions in the Gulf of Aden since 2008, and evacuated Chinese and foreign civilians there in 2015 during a surge of violence in Yemen, after which China and Djibouti reached an agreement to build a permanent base in January 2016. Mordechai Chaziza, "China's Military Base in Djibouti," *Begin-Sadat Center for Strategic Studies*, August 2018; China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Hong Lei's Regular Press Conference on January 21, 2016,* January 21, 2016. Sam Lagrone, "U.S. AFRICOM Commander Confirms Chinese Logistics Base in Djibouti," *U.S. Naval Institute*, November 25, 2015.

expects to exert some degree of control" and that are primarily useful for peacetime operations, "enabling PLA Navy port calls, joint exercises, and antipiracy operations in distant theaters."[338] A host country's willingness to support the PLA's operations is more important than Chinese law, however, as longstanding U.S. experience demonstrates significant constraints imposed by host countries, particularly during times of increased global tensions.[339] In the Middle East, Chinese firms have port operating agreements with Egypt, Israel, Iraq, Kuwait, Saudi Arabia, Turkey, and the UAE.*[340] (See "Port and Special Economic Zone Investments" above for a more detailed discussion of certain Chinese port-related investments in the region.)

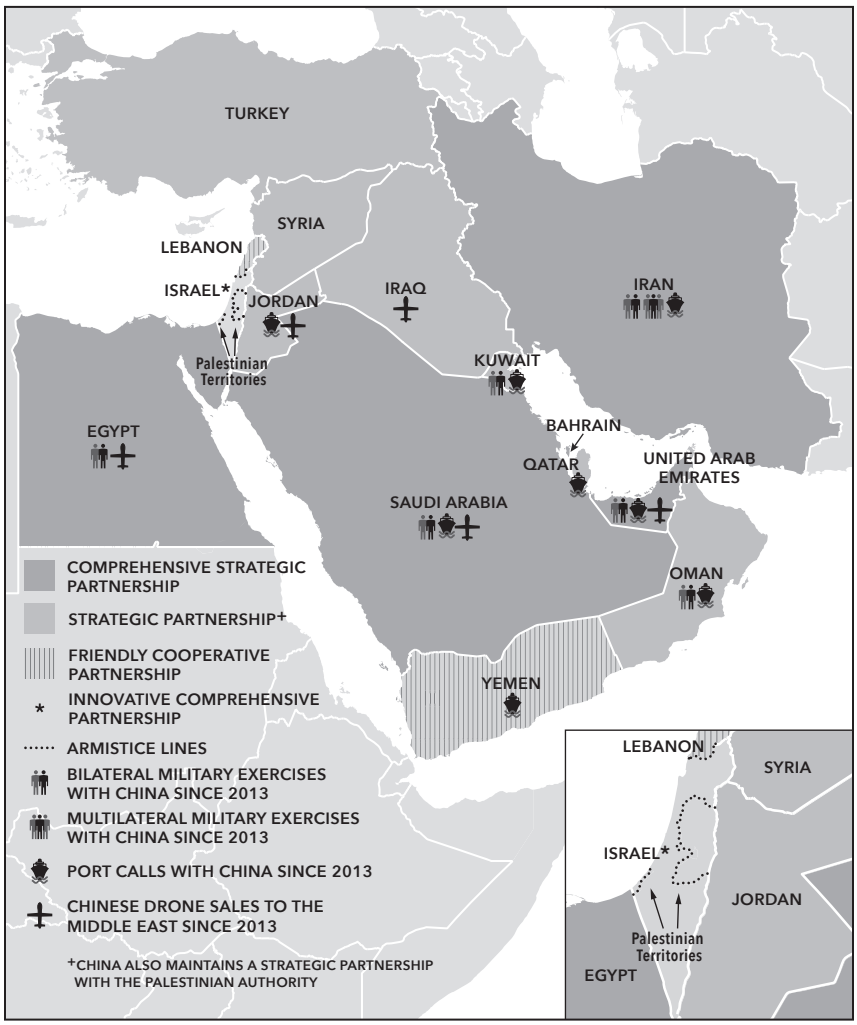
Beijing Leverages Counterpiracy Task Force to Gain Experience Operating Overseas

While China has used antipiracy operations in the Middle East to protect its trade and gain operational experience, these operations do not seem connected to aforementioned regional efforts dealing with Houthi rebels. In December 2008, China responded to the rise in piracy in the Red Sea and Gulf of Aden, primarily from Somalia, by dispatching a Naval Escort Task Force (NETF), or counterpiracy task force, to the Gulf of Aden.[341] The NETF has mostly sustained the same configuration of vessels: two surface combatants and a refueling ship, although the task force has occasionally augmented its presence with other capabilities such as the Song-class diesel-electric submarine.[342] Since 2008, China has maintained its counterpiracy missions, gaining operational experience and escorting a number of commercial ships through the Red Sea.[343] Chinese state media claims that since 2008, the PLA Navy has escorted more than 7,000 commercial ships.[344] According to an August 2024 report by independent analyst Dennis J. Blasko, since December 2008, the PLA Navy has deployed 46 counterpiracy escort task forces to the Gulf of Aden on a UN-authorized mission.[345] Mr. Blasko asserts that until recently, the PLA Navy had normally dispatched three task forces per year at roughly four-month intervals, but the 45th and 46th task forces departed from China on five-month intervals, potentially indicating a shift in deployment patterns.[346] Mr. Blasko states that the more onerous requirements for its surface fleet in operations around Taiwan and the South China Sea may be forcing the PLA Navy to draw forces away from the Gulf of Aden mission, while it also may be possible that the PLA Navy is trying to keep its ships clear of waters threatened by Houthi terrorists.[347]

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*According to Isaac B. Kardon, a senior fellow for China studies at the Carnegie Endowment for International Peace, Chinese firms partially owned or operated 20 ports in the Middle East and North Africa region as of February 2020. These ports may allow the PLA Navy to perform valuable military functions for logistics, intelligence, and communications without the establishment of formal PLA facilities and permissions. Isaac B. Kardon, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China's Military Power Projection and U.S. National Interests*, February 20, 2020, 2, 13.

Figure 4: China's Diplomatic and Military Activity in the Middle East



Source: Various.[348]

Despite the NETF's longstanding presence, the PLA Navy has ignored distress calls from commercial vessels under attack in the Red Sea in contravention of customary and international maritime law, content to free-ride on U.S.-led international counterpiracy operations.[349] For instance, in November 2023, a Liberian-flagged vessel targeted by Iran-aligned Houthi rebels with missiles put out an SOS call in the Gulf of Aden, but the three PLA Navy vessels in the area did not respond.[350] Despite being heavily reliant on access to and safe transit of the Red Sea for trade with Middle Eastern partners, Chinese leaders continue to avoid any outright critique of the Houthis.[351] At a January 2023 press conference in Cairo, for example, Minister Wang simply called for an end to the attacks on

civilian ships and for the resumption of smooth trade flows, without mentioning the terrorist group.[352] Instead, China continues to benefit from the activities of the U.S.-led task force Operation Prosperity Guardian* to safeguard shipping lanes against attacks by Houthi rebels.†[353]

Chinese Maritime Shipping Free-Rides on U.S.-Provided Security

The spillover from the conflict in Gaza has highlighted the limits of China's willingness to play an active security role in the region.[354] As noted above, although China has participated in counterpiracy patrols in the Gulf of Aden since 2008, it has avoided participating in efforts to protect Red Sea shipping lanes as the threat of Houthi attacks forces ships to reroute.[355] The fallout has been particularly harmful to Egypt, where China has billions of dollars' worth of loans and investments.[356] While Minister Wang called for the end to the "harassment of civilian ships in the Red Sea" in January, he also said strikes on Yemen were unauthorized by the UN and that the crisis was a "spillover of the conflict in Gaza."[357] U.S. officials have pressed China to influence Iran into discouraging Houthi attacks, with China reportedly doing so in January 2024 following meetings between U.S. Secretary of State Antony Blinken, U.S. National Security Advisor Jake Sullivan, and head of the CCP's International Department Liu Jianchao.[358] China reportedly discussed the matter with Iran at meetings in Beijing and Tehran in January 2024.[359] Still, China's lack of material support for the U.S. effort to keep shipping lanes safe for all commercial transits may stem from the fact that in March 2024 China and Russia reportedly made a deal with the Houthis to refrain from attacking their ships.‡[360] Chinese ships had reportedly been signaling their identity to avoid attack in previous months, although one was struck in what was likely a mistake.[361] China has maintained a stance of neutrality between the Yemeni government and its Saudi Arabian supporters, and the Houthis and their Iranian backers.[362]

*China is balancing its need to protect Chinese commercial vessels with its response to the Israel-Palestine conflict. As a result, China has not joined the U.S.-led Operation Prosperity Guardian coalition to help protect commercial traffic in the Red Sea. The coalition includes Bahrain, Britain, Canada, France, Italy, the Netherlands, Norway, Seychelles, and Spain. Zhao Ziwen and Jevans Nyabiage, "Why Hasn't China Joined US-Led Naval Force against Houthi Rebel Attacks in Red Sea?" *South China Morning Post*, December 27, 2023; Phelim Kine, "Beijing Shrugs at U.S. Call for Help Protecting Red Sea Shipping," *Politico*, December 21, 2023.

†Chinese state media has attempted to undermine the credibility of the task force and question its motives. For instance, Xinhua, a state-run media outlet, claimed in a December 2023 article that "many allies are unwilling to publicly announce their joining, or even to get involved at all." The same article asserted that the task force is an attempt by the United States "to get its allies to share the escort costs, or even drag its allies into the conflict." *Xinhua*, "Awkward! United States Organizes 'Red Sea Escort,' Few Respond" (尬! 美国搞 "红海护航"应者寥寥), December 30, 2023. Translation.

‡Mr. Rumley stated in his testimony before the Commission that Chinese commercial ships have been relatively safe, with only one Houthi attack taking place in March 2024. Mr. Rumley said that aside from this attack, "Chinese commercial vessels have not been purposely targeted by the Houthis since November 2023." Grant Rumley, written testimony before U.S.-China Economic and Security Review Commission, *Hearing on China and the Middle East*, April 19, 2024, 11–12; Heather Mongilio, "Chinese Tanker Hit with Houthi Missile in the Red Sea," *USNI News*, March 24, 2024.

Beijing Seeks to Use Peacekeeping Operations to Bolster Its Image as a Contributor to Regional Security

China participates in various UN peacekeeping operations that are intended to bolster its image and provide PLA personnel with overseas military experience.[363] China has participated in UN peacekeeping operations for more than three decades, primarily deploying peacekeepers to African countries where China has significant investments.*[364] In the Middle East, China maintains more than 400 peacekeepers, almost all of whom are in south Lebanon supporting the UN Interim Force in Lebanon (UNIFIL).†[365] Chinese peacekeepers in Lebanon conduct trainings and exercises with UNIFIL, which may give them insight into the training practices of militaries from other countries and help them hone skills that could be used in operations elsewhere.[366] For instance, in February 2023, a deputy captain within China's peacekeeping team told Chinese state media that their recent UNIFIL exercise had focused on defending their base camp, rescue operations, psychological counseling, and the resettlement of people.[367] According to China's Ministry of Foreign Affairs, Chinese peacekeepers in Lebanon also provide medical assistance to the locals, helping to boost China's image in the country and among other UN member states.[368] As of late June 2024, China also has five military observers in Israel who have joined the UN Truce Supervision Organization (UNTSO).[369] The UNTSO was established in 1948 during the Arab-Israeli War as the UN's first-ever peacekeeping operation and helps maintain a ceasefire and supervise the application of the armistice agreements.‡[370]

Joint Exercises and Port Calls Help Build Operational Experience and Military Image

In recent years, China has conducted joint military exercises with and made port calls to several Middle Eastern countries, including both U.S. partners and adversarial states like Iran, in order to gain operational experience and build the PLA's image. At the first China-Arab States Summit in Riyadh in December 2022, General Secretary Xi delivered a speech to the 21 members of the Arab League in which he proposed "eight major initiatives on China-Arab practical cooperation," including an "initiative on security and stability."§[371]

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*China had a large peacekeeping presence in the Democratic Republic of the Congo, where it has carried out mining operations, as well as South Sudan, where a Chinese oil company was part of a consortium that extracted South Sudan's oil. China has also placed peacekeeping forces in Mali and Liberia to protect critical infrastructure projects and Chinese-funded enterprises, respectively. U.S.-China Economic and Security Review Commission, *2020 Annual Report to Congress*, December 2020, 174–175.

†UNIFIL was created by the UN Security Council in March 1978 to confirm Israeli withdrawal from Lebanon and to assist the Lebanese government in restoring its effective authority in the area. In 2006, China sent its first peacekeeping contingent to UNIFIL. Comparatively, Indonesia has 1,232 peacekeepers and India has 894. The United States does not currently have any peacekeepers in Lebanon. United Nations Peacekeeping, "Troop and Police Contributions," March 31, 2024; *China Military Online*, "First Batch of 22nd Chinese Peacekeeping Force to Lebanon Sets Off," December 8, 2023; United Nations, "UNIFIL, Lebanon."

‡The United States currently has two peacekeepers at UNTSO, while Finland and Switzerland have the most, at 14 and 13 peacekeepers, respectively. United Nations Peacekeeping, "Troop and Police Contributions," September 18, 2024.

§Chinese state media said the initiative will focus on strengthening strategic dialogues between the defense departments and military forces of China and the partner countries; conducting exchanges between military units and academies; deepening cooperation on maritime security, international peacekeeping and "professional techniques"; and expanding joint exercises and training. As part of this initiative, China will train 1,500 personnel from partner countries in fields such as smart policing and cyber security law enforcement, implement the China-League

During the inaugural summit, all sides agreed to further cooperation between their militaries, including in joint exercises.[372] According to Mr. Rumley, some of China's exercises and port calls appear to be more symbolic than practical, while others are more sophisticated and have led to reciprocal exercises in China.[373] Mr. Rumley asserts that China's exercises with Middle East partners are "designed to showcase the capabilities of the Chinese military, build up PLA experience, and improve China's image as a security partner."[374]

In recent years, China conducted several military exercises with Arab countries that seek in part to improve China's operational experience and military image:

- *UAE:* In August 2023, China and the UAE held their first joint exercise, Falcon Shield 2023, in Xinjiang.[375] Associate professor at the Near East South Asia Center for Security Studies David Des Roches describes the joint exercise as an "unfortunate development" and suggests that the UAE is trying to demonstrate to the United States that it has alternative options for security partners.[376] The most recent iteration of the training exercise took place in July 2024, again in Xinjiang.[377] During both exercises, the UAE deployed its Dassault Mirage 2000-9DAD/EAD fighters, an aircraft also operated by Taiwan's air force, potentially giving the PLA Air Force an opportunity to gather information on its capabilities.[378]
- *Saudi Arabia:* China has also conducted joint naval exercises with Saudi Arabia, referred to as the Blue Sword exercises.[379] The first edition of the Blue Sword exercises was held in 2019 near Saudi Arabia's Jeddah port, and the second edition was held in 2023 in Zhanjiang, China, at a naval brigade camp.[380] Following the most recent event, Chinese media suggested these exercises were now "routine" and offered both countries an opportunity to learn from each other's strengths, highlighting that China's military training system is different from Saudi Arabia's Western-style training doctrine.[381] The exercises focus on counterpiracy operations, including basic training, professional training, and exercises involving simulated rescue operations.*[382]
- *Iran:* China has also participated in military exercises with Iran. Most recently, in March 2024, China conducted naval drills with Iran and Russia in the Gulf of Oman.[383] These exercises began in 2018 and are in their sixth iteration, but the 2024 iteration was the first time other countries, including Oman, Pakistan, India, and others, have been allowed to observe.[384] Mr. Rumley notes that China's exercise with Iran and Russia is one example of Beijing focusing on a more symbolic rather than practical operation.[385] During the exercise, the three militaries conducted a hostage rescue drill and tactical maneuvering drills.[386]

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of Arab States Cooperation Initiative on Data Security, establish a network information exchange mechanism, and strengthen exchanges and dialogues in data governance and cyber security. *Xinhua*, "Xi Proposes Eight Major Initiatives on China-Arab Practical Cooperation," *China Daily*, December 10, 2022.

*Basic training and professional training involve things like underwater searches, rappelling from helicopters, and practice shooting various weapons. Seong Hyeon Choi, "Chinese and Saudi Navies Launch Joint Counterterrorism Exercise against Backdrop of Israel-Hamas War," *South China Morning Post,* October 10, 2023.

China's Growing Role in the Middle Eastern Arms Market

Although it is a relatively small supplier of arms to the Middle East relative to the United States,* China has sought to create deeper inroads into Middle Eastern countries through the transfer of arms and dual-use technologies in order to establish itself as an alternative security partner in the region.[387] China has attempted to compete in this market due to its relatively low-cost options, affordable services, and a lack of geopolitical conditions placed on sales, among other factors.[388] In particular, China has stood out as an exporter of military drones to countries such as Saudi Arabia and the UAE.[389]

China Targets Middle East as Market for Arms Sales

China's sale of arms and dual-use technologies in the Middle East simultaneously serves its own commercial interests and strengthens its position as an alternative regional security partner at the United States' expense. In the last decade, China has begun to refocus arms exports to the Middle East.†[390] Notably, China's 2016 *Arab Policy Paper* called for increased cooperation between China's military and Arab countries and to "deepen cooperation on weapons, equipment and various specialized technologies, and carry out joint military exercises."[391] General Michael Kurilla, the commander of U.S. Central Command, told the Senate Armed Services Committee in March 2023 that China's arms sales to the Middle East had increased by 80 percent over the previous ten years.[392] Still, China's arms sales to the region—and globally—remain low relative to the United States and other arms exporters.‡[393]

China markets aircraft as well as air and missile defense, anti-tank, and anti-drone systems in the region. For example, in February 2024, 36 Chinese companies, including China North Industries Corporation and China National Aero-Technology Import and Export Corporation, attended the World Defense Show in Saudi Arabia to market their services.[394] Chinese companies displayed fighter jet models, long-range air and missile defense systems, and anti-tank systems, among other equipment.[395] The PLA Air Force also demonstrated J-10 fighter jets—the first time China has displayed them at an international expo.[396] No new deals were publicly announced in 2024 for Chinese fighter jet purchases, but in 2023 the UAE government signed a deal to purchase 12 Chinese L-15A advanced jet trainers.[397] In 2022, China delivered the Silent Hunter air defense system to Saudi Arabia.[398] This is an anti-drone weapons system intended to protect Saudi Arabia against loitering munitions and

*According to data from the Stockholm International Peace Research Institute, the United States constituted the largest share of arms export to the Middle East between 2019 and 2023, accounting for 38 percent of total exports. Pieter D. Wezeman et al., "Trends in International Arms Transfers, 2023," *Stockholm International Peace Research Institute*, March 2024, 3.

†China's arms exports to the region have varied over time; in 1986, it sent almost 95 percent of its arms exports to Middle East countries, but this percentage dropped significantly throughout the 1990s and early 2000s as China reoriented its arms sales to Asian customers. Maria Mary Papageorgiou, "China's Growing Presence in the Middle East's Arms Race and Security Dynamics," *Springer Nature Switzerland*, 2023, 263–265; China Power Project, "How Dominant Is China in the Global Arms Trade?" *Center for Strategic and International Studies*, May 27, 2021.

‡Between 2019 and 2023, three of the top ten arms importers were in the Middle East: Saudi Arabia, Qatar, and Egypt. The United States remains the top supplier of arms to the region, followed by France, Italy, and Germany. Pieter D. Wezeman, et al., "Trends in International Arms Transfers, 2023," *Stockholm International Peace Research Institute*, March 2024, 11.

Iran-backed Houthi drones.[399] In 2017, the UAE purchased Blue Arrow 7 anti-tank missiles from China to arm its Wing Loong-2 drone fleet.[400] China delivered these purchases to the UAE in 2020, and the Stockholm International Peace Research Institute estimates there were around 500 missiles in the delivery.[401]

China Has Emerged as the Main Supplier of Military-Grade Drones in the Middle East

China has positioned itself as the primary supplier of drones to the region, including to longstanding U.S. security partners Saudi Arabia and the UAE.[402] Maria Papageorgiou, a lecturer at the University of Exeter, testified before the Commission that between 2016 and 2020, China's arms sales to Saudi Arabia increased by 386 percent and to the UAE by 169 percent.[403] During this period, the main types of weapons purchased from China were drones, specifically the Wing Loong-1 and the Wing Loong-2 (see Table 3 below).[404] Saudi Arabia is also expected to receive the Wing Loong-10, a high-altitude drone capable of carrying several munitions, sometime in 2024.[405] In April 2024, Iraq received a delivery of Caihong-5 (CH-5) unmanned aerial vehicles (UAVs).[406] According to news reports, the Iraqi Army Aviation Command had expressed interest in acquiring CH-5 drones since April 2023.[407] China's CH-5 drones can carry heavier payloads and have a longer range and endurance life than their predecessors (CH-4s).[408] These features could allow for more effective strike missions or intelligence gathering.[409]

Table 3: Chinese Military-Grade UAVs Sold to Middle Eastern Countries (2010–2023)

Country	UAV Design	Manufacturer	Year Ordered	Number Ordered
Iraq	CH-4	CASC	2014	20*
Saudi Arabia	CH-4	CASC	2014*	20*
Jordan	CH-4	CASC	2015*	6*
Egypt	ASN-209	CATIC	2010*	18
UAE	CR-500	NORINCO	2019*	10*
UAE	Wing Loong-1	CADI/AVIC	2011*	25*
Saudi Arabia	Wing Loong-1	CADI/AVIC	2014*	15*
Egypt	Wing Loong-1	CADI/AVIC	2016*	10*
Egypt	Wing Loong-1	CADI/AVIC	2018	32*
Saudi Arabia	Wing Loong-2	CADI/AVIC	2017	50*
UAE	Wing Loong-2	CADI/AVIC	2017	15*
Saudi Arabia	CH-4	CASC	2017	5*
Iraq	CH-5	CASC	2023*	Unclear

Note: Values with an asterisk are estimates.
Source: Various.[410]

Chinese military drones are more accessible to foreign militaries, as they are priced at roughly half the cost or less of their U.S. counterparts.[411] Dr. Papageorgiou suggests that the Gulf states in particular are attracted to Chinese armed drones because of their lower cost.[412] Although Chinese drones are typically of a lesser quality, the lower price point allows countries in the region to purchase them in larger quantities—an advantage in conflict zones where they can be quickly shot down.[413] Additionally, Mr. Rumley explains that regional actors are incentivized to buy Chinese armed drones because it will give them access to Chinese drone technology.[414] According to the U.S. Department of Defense, China entices countries in the Middle East to buy its weapons systems, especially drones, by offering flexible payment options, gifts, and donations to the purchasing country.[415]

Implications for the United States

The Middle East continues to be a volatile region where factional and sectarian conflict can quickly spill over and threaten the security and commercial interests of the United States and its allies and partners. While China does not yet appear intent on replacing the United States as the dominant outside power in the region, it acts opportunistically to undermine U.S. influence. China's approach to the region is mixed, seeking to strike a balance between undertaking efforts that may undermine the influence of the United States while maintaining a threshold of stability necessary to ensure unabated commercial activity. China may also believe that it benefits if continued regional turmoil deflects some U.S. energy and attention away from its own immediate periphery. However, China's substantial economic and commercial interests in the region, and its reliance on key trade routes that pass through it, leave it exposed to potential disruption if a significant conflict among regional powers were to break out.

Diplomatically, the Middle East presents an opportunity for China to promote its vision of global leadership. First, China is developing deeper relations with both U.S. partners and rivals in the region. Second, Beijing uses its three initiatives, the Global Security Initiative, Global Development Initiative, and Global Civilization Initiative, to engage Arab states and to present an alternative vision that appeals to the region's autocratic governments. Lastly, China uses multilateral forums, such as the China-Arab States Cooperation Forum, to spread narratives and gain support for issues such as its human rights abuses in Xinjiang or bolster its territorial claims in the South China Sea or Taiwan.

Iran is also a crucial element of China's efforts to undermine the United States and the rules-based international order it leads. China and Iran harbor a shared sense of grievance toward the U.S.-led world order. By sustaining Iran—and, indirectly, its proxy forces throughout the region—Beijing complicates the security landscape for the United States and supports an effective counterweight to rising regional powers on the Arabian Peninsula. Chinese purchases of sanctioned Iranian crude oil have increased dramatically in recent years, to the point where China now purchases nearly 90 percent of Iranian oil and in doing so has established a network of

logistical and financial institutions to bypass U.S. and international sanctions regimes against Iran.[416] This evolving and increasingly sophisticated sanctions circumvention scheme is eroding the economic leverage the United States and the international community can bring to bear not only to contain Iran but also to use against other adversarial states like Russia and North Korea, who together with China are forming what researchers at the Atlantic Council have dubbed the "axis of evasion."[417] However, China's partnership with Iran has limits, as China acts exploitatively to purchase Iranian oil that cannot easily be sold to other buyers due to sanctions at below-market prices, all while signaling Beijing's unwillingness to enmesh too deeply for fear of souring relations with Saudi Arabia, the UAE, and other important actors.[418]

Another area of increasing concern for the United States pertains to China's ability to acquire cutting-edge U.S. technology subject to export controls given the presence of Chinese technology companies in the region's digital infrastructure, particularly in the Arab Gulf. Huawei, ZTE, and other companies on the Commerce Department's Entity List have been instrumental in the buildout of telecommunications and cloud infrastructure across the region. With the rapid advent of generative AI and the ambition of Saudi Arabia, the UAE, and other wealthy Gulf states to become AI leaders, there is accelerating demand for dual-use hardware and software supplied by leading tech companies. In October 2023, the Commerce Department expanded semiconductor export controls to require licenses for sale of cutting-edge chips to certain Middle Eastern countries, including the UAE and Saudi Arabia, consistent with prior rules to prevent Chinese military end use.[419] Microsoft and the UAE's leading AI firm Group 42 reached a landmark agreement in April 2024 that followed the latter's commitment to untangle ties with Chinese tech companies, including Huawei. This case is informative regarding how best to incentivize key partners with whom the United States maintains close security relationships to effectively constrict potential conduits of technology transfer to China.

Lastly, though China maintains a modest maritime security presence in the Middle East operating out of its base in Djibouti, it has yet to forward-deploy the forces necessary to conduct military operations that could rival the U.S. security architecture in the region. It appears for now that Beijing is content to free-ride off the security that U.S. counterpiracy operations, counterterrorism operations, and broader security partnerships provide in the region. China may also be considering options for new bases in the region; for example, the U.S. Department of Defense asserted in 2023 that China has probably considered the UAE for a PLA logistics facility.[420] This and similar port construction projects undertaken by Chinese companies in areas of strategic importance should be closely monitored, as should arms sales and increasing military ties between the PLA and countries in the region.

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CHAPTER 6: KEY ECONOMIC STRATEGIES FOR LEVELING THE U.S.-CHINA PLAYING FIELD

Abstract

Many of China's economic, technological, and military policies are at the expense of and contrary to U.S. and allied interests. Today, China continues to flood global markets with exports in an attempt to boost its domestic economic growth while simultaneously pursuing the development of emerging technologies to assert its global geopolitical interests and spur military modernization. In response, the United States' economic approach toward China is evolving to combat China's state-led, non-market practices. The United States' toolkit for addressing these challenges includes trade policy tools, such as tariffs on imports from China, controls on the transfer of technology, and restrictions on inbound and outbound investment that might advance China's development of sensitive technologies. At the same time, there remains a lack of consensus on the scope and implementation of these measures. Lacking an overarching set of objectives and a comprehensive strategy for achieving them, some policies are implemented at cross-purposes, weakening the United States' approach to economic competition with China. Unlike the National Security Strategy (NSS), the United States does not yet have a unified strategy organizing its approach to economic security. The effectiveness of the United States' economic security strategy faces further limits at present from a lack of data and analytic capabilities as well as a lack of adequate alignment of policies with key allies and partners.

Key Findings

- U.S. trade policy is a key tool for defending against China's non-market economic practices, diversifying U.S. supply chains, and preserving U.S. economic security.
- Efforts to de-risk supply chains are undermined by a lack of a cohesive trade policy as well as the continued presence of Chinese value-added content in non-Chinese imports.
- As China increasingly asserts itself as a significant military power, export controls have emerged as a central tool in U.S. efforts to deny China direct access to critical dual-use goods and advancements in national security-sensitive technologies. However, a number of operational challenges diminish their effectiveness, including lack of coordination among key allies, compliance challenges, and uneven enforcement.
- While Congress in 2018 strengthened the U.S. inbound investment screening mechanism, it considered but did not implement matching rules on outbound investments. In the last few years,

policymakers have actively explored creating an outbound investment screening mechanism. Such a mechanism would curb important U.S. economic support to China's advanced technology ambitions, such as the transfer of management expertise, know-how, and capital that is unaddressed by the United States' existing toolkit, including a yet-to-be-implemented executive order (EO).

- A lack of adequate detailed data on U.S. trade and investment flows poses an acute challenge to effective policy scoping and implementation.
- Economic partners in the G7 and other developed markets have implemented trade measures to address trade distortions caused by China's state-led economy; these measures continue to evolve. They are also exploring parallel export controls and outbound investment screening policies to limit the flow of key technologies. At times, the United States has had difficulty obtaining alignment with allies, which can undercut the effectiveness of U.S. policy and put U.S. companies at a disadvantage.

Recommendations

The Commission recommends:

- Congress consider legislation to eliminate federal tax expenditures for investments in Chinese companies on the Entity List maintained by the U.S. Department of Commerce, or identified as a Chinese military company on either the "Non-Specially Designated National (SDN) Chinese Military-Industrial Complex Companies List" maintained by the U.S. Department of the Treasury or the "Chinese military companies" list maintained by the U.S. Department of Defense. Among the tax expenditures that would be eliminated prospectively are the preferential capital gains tax rate, the capital loss carry-forward provisions, and the treatment of carried interest.
- To enhance the effectiveness of export controls, Congress should:
  - Improve the analytic and enforcement capabilities of the U.S. Department of Commerce's Bureau of Industry and Security (BIS) by providing resources necessary to hire more in-house experts; establish a Secretary's Fellows Program to more effectively attract interagency talent; expand partnerships with the national labs; increase access to data and data analysis tools, including the acquisition of proprietary datasets and modern data analytic systems; and hire additional agents and analysts for the Office of Export Enforcement.
  - Amend the Export Control Reform Act to require that within 30 days of granting a license for export to entities on the Entity List, including under the Foreign Direct Product Rule, BIS shall provide all relevant information about the license approval to the relevant congressional committees, subject to restrictions on further disclosure under 50 U.S.C. § 4820(h)(2)(B)(ii).
  - Direct the president to:

- Designate a senior official to coordinate efforts across the Administration to prioritize bilateral and multilateral support for U.S. export control initiatives; and
- Establish a Joint Interagency Task Force, reporting to and overseen by the national security advisor and with its own budget and staff, to assess ways to achieve the goal of limiting China's access to and development of advanced technologies that pose a national security risk to the United States. The task force should include designees from the U.S. Departments of Commerce, Defense, State, Treasury, and Energy; the intelligence community; and other relevant agencies. It should assess the effectiveness of existing export controls; provide advice on designing new controls and/or using other tools to maximize their effect while minimizing their negative impact on U.S. and allied economies; and recommend new authorities, institutions, or international arrangements in light of the long-term importance of U.S.-China technology competition.

○ Codify the "Securing the Information and Communications Technology and Services Supply Chain" Executive Order to ensure that as the authority is used more robustly, challenges to its status as an executive order will not constrain BIS's implementation decisions or delay implementation.

- Congress direct the Administration to create an Outbound Investment Office within the executive branch to oversee investments into countries of concern, including China. The office should have a dedicated staff and appropriated resources and be tasked with:
  - ○ Prohibiting outbound U.S. investment through a sector-based approach in technologies the United States has identified as a threat to its national or economic security;
  - ○ Expanding the list of covered sectors with the goal of aligning outbound investment restrictions with export controls. The office should identify and refine the list of covered technologies in coordination with appropriate agencies as new innovations emerge; and
  - ○ Developing a broader mandatory notification program for sectors where investment is not prohibited to allow policymakers to accumulate visibility needed to identify potential high-risk investments and other sectors that pose a threat to U.S. national or economic security. In addition to direct investments, the notification regime should capture passive investment flows to help inform debates around the expansion of prohibitions to cover portfolio investment.
- Congress repeal Permanent Normal Trade Relations (PNTR) for China. The PNTR status allows China to benefit from the same trade terms as U.S. allies, despite engaging in practices such as intellectual property theft and market manipulation. Repealing PNTR could reintroduce annual reviews of China's trade practices, giving the United States more leverage to address unfair trade behaviors. This move would signal a shift toward a more

assertive trade policy aimed at protecting U.S. industries and workers from economic coercion.

- Congress direct relevant departments and agencies to expand their data collection and transparency initiatives into the volume and types of investment flowing into China by taking the following actions:
  - Amending the International Investment and Trade in Services Survey Act to require the Bureau of Economic Analysis within the U.S. Department of Commerce to publish more detailed sectoral breakdowns of U.S. direct investment in China on a nationality basis and the U.S. Department of the Treasury to publish annual sector breakdowns of U.S. portfolio investment in China on a nationality basis. The portfolio investment sectors should be more specific than those provided by the Commerce Department for direct investment. Additionally, Congress should require the Treasury Department to publish quarterly updates—without sector breakdowns—of nationality-based portfolio investment in China.
  - Requiring the U.S. Department of Commerce to produce a report on the feasibility and methodology for publishing nationality-based results for direct investment, where offshore tax havens and locales of incorporation would not be said to receive hundreds of billions of dollars and true destinations of the capital would be accurately identified.
- Congress direct the Administration to impose sanctions on Chinese financial institutions that violate sanctions, including those that are proven to be working with or supporting the Russian military industrial base or facilitating purchases of Iranian oil.
- In light of the periodic and increasingly frequent removal of some of these materials from Chinese websites, Congress direct the executive branch to fund the creation and operation of a regularly updated, permanent data archive, in effect a series of snapshots of portions of the Chinese internet. In the past decade, foreign analysts have made use of open source Chinese-language materials to gain insight into various aspects of current policy as well as internal (but unclassified) discussions of future military, diplomatic, and economic strategy. Information would be stored in the permanent data archive, accessible to both government and private analysts.
- Congress consider legislation to set priorities and goals for U.S.-China economic relations. These policy priorities and goals should include:
  - Updating existing trade and economic tools to ensure their timely application, utility, and effectiveness in countering China's non-market economic policies;
  - Limiting U.S. economic and security dependence on supply chains in critical and emerging products, technologies, and services provided by companies controlled, operating in, or subject to the influence of China;

- Enhancing the accountability of the executive branch to Congress and increasing the transparency of its actions to ensure coordinated governmental action and respect for Congress's constitutional Article I, Section 8 authority;
- Prioritizing domestic production and employment while also recognizing the need, as appropriate, to coordinate and align policies with friends and allies;
- Acting to address production overcapacity fueled by Chinese policies and actions; and
- Advancing the resilience of the U.S. economy and ensuring its access to key inputs and technologies.

- Congress pass legislation eliminating the ability of entities operating in U.S. Foreign-Trade Zones (FTZs) to qualify for zero or lower tariffs on products imported from China or Chinese-affiliated or -invested entities into the FTZ and then reexported.
- The relevant committees of Congress hold hearings to assess the desirability and feasibility of creating a trade defense coalition with other like-minded countries to forestall the risk of a second China shock. Such a grouping would seek to align policies for responding to the recent acceleration in China's exports of subsidized, underpriced materials and manufactured goods.

Introduction

In recent years, U.S. policymakers have begun to rethink many of the assumptions that undergirded the previous several decades of trade and economic engagement with China. While China undertook some measures to reform its economy in ways to promote private enterprise and foreign investment, such measures invariably proved secondary to the Chinese Communist Party's (CCP) core goals of remaining in power, strengthening its economy and military power and growing China's global influence. The CCP never intended to cede control of China's economy to market forces.

Early indications suggest that attempts by the United States to limit China's access to and development of certain dual-use and foundational technologies, promote de-risking, and address economic distortions and unfair trade practices from China have had some success. But even as a growing array of policy tools are being deployed to evolve U.S. economic, trade, and related national security policy toward China, the U.S. economy remains deeply intertwined with China's. There is a need for a more comprehensive policy realignment—including a review of trade tools, export controls, and investment restrictions—as well as a significantly greater effort to align these measures with those of allies and like-minded countries in order to ensure their efficacy.

This chapter begins with a review of how China continues to pursue its economic interests in ways inconsistent with global norms of fair trade. The chapter then reviews the United States' response to China's action across three arenas: trade policy, export controls, and investment screening. The chapter draws on the Commission's May 2024 hearing on "Key Economic Strategies for Leveling the

U.S.-China Playing Field: Trade, Investment, and Technology," consultations with experts, and open source research and analysis.

Economic Security as a Whole-of-Government Approach

Over the past three decades, U.S. economic policy toward China was substantially developed and implemented in functional silos. The United States tailored policy approaches based on explicit concerns—such as specific market access challenges, intellectual property (IP) theft, or steel and aluminum overcapacity—so as not to derail broader economic cooperation or to slow what was widely hoped to be a process of liberalization by China.[1]

Given this, U.S. strategy and implementation of its key economic tools were also siloed. U.S. officials were aware that China's non-market economic practices frequently advantaged Chinese companies at the expense of U.S. firms and workers and resulted in significant shifts in supply chains. However, optimism that a complex and interdependent global economy would deter conflict and liberalize China tempered the U.S. response and kept the focus on more narrow industry-specific issues or better enforcement of existing trade rules.[2] Similarly, despite periodic concerns that technology transfers might be assisting the People's Liberation Army's military modernization drive, until very recently this was viewed as an issue for narrow export controls on weapons and dual-use products, not a reason to broadly challenge China's innovation ecosystem or limit flows of U.S. capital and know-how that helped build up China's technological capabilities in critical and emerging technologies.[3]

Many policymakers have come to believe that the size, scale, and complexity of China's challenge to U.S. interests requires more intense coordination between economic and national security goals.[4] The United States, however, has not reshaped its architecture of economic tools accordingly despite a consensus that China is now a whole-of-government problem.[5] While the United States has pursued numerous actions to refine and improve the tools it uses to address the trade, technology, and investment challenges it faces from China, its actions remain fundamentally siloed.

U.S. export controls on advanced chips illustrate the risks of the current approach. The U.S. government restricts advanced semiconductor technologies aimed to limit China's military modernization. Whatever their impact on China's ability to achieve progress on artificial intelligence (AI) and supercomputing, U.S. export controls have evidently pushed Chinese chip makers to focus additional efforts on legacy chip production.[6] However, trailing-edge—or legacy—chips are also critical to U.S. and allied commercial and military supply chains.[7] Chinese dominance of the sector is thus incongruent with U.S. strategic goals.[8] Expanding export controls would likely be ineffective for this problem. China has secure access to the technology necessary for legacy production and already accounts for 30 percent of worldwide manufacturing capacity.[9] Instead, other tools will be needed to address the United States' strategic objectives of maintaining an edge in the most advanced semiconductors while avoiding excessive dependence on China for legacy chips.[10]

The United States publishes a comprehensive National Security Strategy (NSS) that helps provide guiding principles and goals, coherence, and coordination across disparate government efforts for myriad U.S. national security policies.[11] The NSS also helps provide important messaging and coordination with key allies and partners. The most recent NSS repeatedly mentioned economic issues vis-à-vis U.S. competition with and the national security threat from China. These issues span China's non-market abuses and economic coercion, China's partially closed economy and growing technological capabilities, and China's global economic importance and the benefits it reaps from the open international economic order.[12] Yet even with this recognition of China-related challenges, there is no comparable strategy on the economic side that defines a clear set of principles and goals to guide restructuring of the United States' economic relationship with China, foster coordination across varied departments and policy tools, and drive development of the tools that will be needed.

Deploying Tariffs and Other Trade Measures

Emerging Consensus on Trade Policy Objectives toward China

Key priorities of U.S. trade policy since 1945, according to the Congressional Research Service, have included "(1) fostering economic growth and securing more open, equitable, and reciprocal market access for U.S. exports and investment; (2) protecting U.S. producers from unfair foreign trade practices and rapid surges in fairly traded imports; and (3) strengthening the rules-based multilateral trading system to help achieve the above objectives and further U.S. foreign policy."[13] Since 2017, however, the focus of U.S. trade policy has shifted in significant ways as the United States pivoted to address what it saw as rising economic challenges and flaws in the previous policy framework, particularly vis-à-vis China.[14] The United States has increasingly deployed its trade policy instruments to address three areas in the U.S.-China economic relationship:

- *China's harmful economic practices:* Since China joined the WTO, the United States has largely sought to address the costs to the U.S. economy from China's non-market practices through bilateral engagement and multilateral mechanisms. Beijing's harmful policies include unfair subsidies, access to free or subsidized credit, and other non-trade barriers; coercive IP transfer and theft; and protectionism and market access restrictions.[15] Distortions in China's system have often led to significant overcapacity, which, when combined with the open international trading system, has enabled China's export-led growth model and injured market-based producers in other countries.[16] In 2018, Section 301 tariffs were unilaterally imposed to make progress on these issues. This marked a shift from a previous approach based on bilateral and multilateral frameworks.[17]
- *Supply chain resilience:* In response to growing geopolitical tensions and, later, shocks related to the COVID-19 pandemic, the United States has intensified its efforts to address supply chain risks and reduce reliance on Chinese production. As economist

Emily Blanchard observes, governments are no longer just interested in what goods and services enter or are sold within their borders but also are looking to reshape patterns of production occurring outside their borders and even before domestic firms may be involved, an approach that was not deeply considered when the WTO framework was established.[18]

- *The intersection of economic and national security:* In recent years, U.S. trade policy has aimed to address the United States' persistent and massive trade deficit with China, the loss of U.S. jobs and industry, and potential national security concerns arising from trade-related harm to domestic industries such as steel and aluminum.[19] Ongoing policy debates center on how to deploy trade measures to ensure the United States does not lose critical industries to low-cost, state-supported, and non-market-based competition from China.

Recent U.S. Trade Measures

Since 2017, the United States has promulgated a complex web of trade measures to mitigate harms from Chinese imports in an attempt to create a more level playing field. Authorities under Section 301 of the Trade Act of 1974 were used to undertake an expansion in tariffs that was unprecedented in recent history. Alongside these actions, the United States also turned to Section 201 of the Trade Act of 1974 and Section 232 of the Trade Expansion Act to protect domestic industry, including from harmful Chinese economic practices. At the same time, U.S. industry expanded use of quasi-judicial trade remedy tools such as antidumping investigations, which were the source of most pre-2017 additional tariffs on imports from China following its accession to the WTO.[20] By the end of 2020, the United States' trade-weighted average tariff on Chinese products (including antidumping duties) was 26.7 percent, compared to 8.4 percent at the start of 2018.*[21]

Section 201 Action on Washing Machines and Solar Panels

On February 7, 2018, the United States placed duties on imports of washing machines and solar cells and modules under Section 201 of the Trade Act of 1974, the first imposition of Section 201 tariffs since 2001.[22] According to economic historian Douglas Irwin, Section 201 was meant to be "the principal means by which industries harmed by imports could receive temporary relief from foreign competition."[23] If the U.S. International Trade Commission (USITC) determines following an investigation that a product's import volume is a "substantial cause of serious injury, or the threat thereof, to the domestic industry," the U.S. president can then decide to impose trade restrictions.[24] Relief under Section 201 is meant to serve as a temporary "global" safeguard, meaning import restrictions for a particular product or industry are applied to imports from all coun-

*The antidumping and countervailing duties (AD/CVD) assessed by the United States tended to be substantially higher than tariffs under Section 301. The average tariff without accounting for these trade remedies rose from 3.1 percent in January 2018 to 19.3 percent in December 2020, reflecting that Section 301 and other trade authorities were the primary drivers of the increase. Chad P. Bown, "U.S.-China Trade War Tariffs: An Up-to-Date Chart," *Peterson Institute for International Economics*, April 6, 2023.

tries.*[25] Although these safeguard duties enable the United States to deal with temporary import surges in a way that is compliant with the WTO's safeguard provisions, the authority has seen limited use. This is partially because the standard of "substantial cause" has proven difficult to establish, while its requirement of "serious injury" entails a much more onerous burden of proof than the equivalent standard in antidumping and countervailing duties (AD/CVD) proceedings.[26]

After the USITC concluded two investigations on imports of washing machines and solar products, the U.S. government placed tariffs of up to 50 percent on residential washers and initial tariffs of 30 percent on certain solar cells and modules.†[27] Though the Section 201 duties on residential washers ended in February 2023,‡ the measures on solar products were renewed in February 2022 to last until 2026 (see textbox below).[28]

Overlapping Trade Measures in the Solar Industry

The numerous trade measures covering solar cells and modules illustrates the wide-ranging playbook the United States is employing to counter unfair Chinese trade practices. Christian Roseland, an analyst at Clean Energy Associates, identifies seven separate U.S. trade actions (including repeated use of AD/CVD statutes) covering solar products that remain in effect.[29] These measures include:

- *AD/CVD orders:* The United States now enforces three separate AD/CVD orders related to Chinese solar production, and an additional investigation was launched in 2024. In 2012, the U.S. Department of Commerce placed AD/CVD on all solar cells from China.[30] In 2015, the Commerce Department issued a new AD/CVD order covering solar modules assembled in China, regardless of where the solar cells originated, and it also placed an antidumping order on Taiwan in response to Chinese companies establishing manufacturing facilities on the island.[31] In 2022, the Commerce Department found that Chinese companies were routing covered solar products through Cambodia, Malaysia, Thailand, and Vietnam to circumvent the AD/CVD order, although additional duties on these imports were waived until June 2024.[32] Most recently, in May 2024, the Commerce Department initiated, at the request of petitioners, a new AD/CVD case aimed at imports from various Southeast Asian countries that are not otherwise subject to the circumvention finding.[33] The inves-

*As a result, Section 201 duties generally cannot be evaded through transshipment, an illicit activity that undermines other trade authorities like AD/CVD orders, which target imports on a country-specific basis. Specific countries are sometimes exempted from Section 201 duties.

†As temporary measures, both tariffs were scheduled to be gradually phased out over a number of years. In addition, the Administration used tariff-rate quotas, which allow a limited number of goods to enter at a lower tariff rate. U.S. Trade Representative, *Fact Sheet: Section 201 Cases: Imported Large Residential Washing Machines and Imported Solar Cells and Modules*.

‡In its statutorily required evaluation of the Section 201 washing machine duties, the USITC assessed that the duties led to a decline in imports of residential washers and an increase in U.S. industry's market share and financial performance between 2018 and 2022, with LG Electronics USA, Inc. and Samsung Electronic Home Appliance America, LLC emerging as the primary beneficiaries. U.S. International Trade Commission, *Large Residential Washers: Evaluation of the Effectiveness of Import Relief*, August 2023, 1.

Overlapping Trade Measures in the Solar Industry—*Continued*

tigation includes alleged instances of transnational subsidies provided by Chinese policy banks.[34] Prior to 2024, the United States did not countervail subsidies provided by a government to firms operating in another country.[35] (For more on the Commerce Department's changing approach to transnational subsidies, see Chapter 4, "Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws.")

- *Safeguard duties:* In January 2018, the United States placed a tariff-rate quota on imports of solar cells and modules from all countries—though China was among the largest sources of covered products—for an initial period of four years, which was extended for another four-year period in 2022.[36] Between 2019 and 2024, bifacial (i.e., two-sided) solar cells, a product predominantly used in large-scale utility projects, were granted an exclusion from the safeguard action; the U.S. government terminated the moratorium in May 2024 after imports of the product continued to surge.*[37]
- *Section 301:* Solar cells and modules were included in the duties imposed after the Section 301 investigation into China's technology transfer, IP, and innovation policies. In May 2024, the U.S. government announced that it would double the tariffs on certain solar products from 25 percent to 50 percent as part of the Office of the U.S. Trade Representative's (USTR) four-year review of the Section 301 action.[38]
- *Uyghur Forced Labor Prevention Act (UFLPA):* The UFLPA creates a rebuttable presumption that goods produced in Xinjiang are made using forced labor and therefore barred from importation.[39] The United States has used the UFLPA to seize over a thousand shipments of solar products, presumably because they use polysilicon originating from the region.[40]

In total, imports subject to these trade measures face an effective tariff between 91 percent and 286 percent.[41] Other products, such as steel, aluminum, and semiconductors, are also subject to duties under multiple authorities.†[42]

*The Trump Administration also attempted to revoke the exclusion at the end of 2020, one year after introducing it. However, the U.S. Court of International Trade ruled in 2021 that revocation fell outside of the president's authority and reinstated the exclusion. President Joe Biden elected to maintain the exclusion in 2022 when extending the safeguard measures. In 2023, a federal appeals court overturned the Court of International Trade's finding, ruling that the president does have authority to terminate exclusions from the tariff. Jennifer A. Dlouhy, "Biden Seeks to Bolster Solar Manufacturers with Tax and Trade Moves," *Bloomberg*, May 16, 2024.

†These overlapping measures, however, create a complex regulatory environment, and industry representatives have asserted that uncertainty about future duties undermines efforts to create resilient supply chains. Clean Energy Associates and American Council on Renewable Energy, "Potential Impacts of the 2024 Antidumping and Countervailing Duties on the U.S. Solar Industry," July 9, 2024, 26.

Section 232

Another trade policy tool the United States has deployed is Section 232 of the 1962 Trade Expansion Act, which authorizes actions when the quantity or circumstances of specific imports pose a threat to U.S. national security.*[43] Between 2001 and 2017, no Section 232 investigations were conducted.†[44] Since 2017, however, nine new investigations have been initiated into imports of steel, aluminum, automobiles and automobile parts, and other metals and components.[45] In seven of these cases, the Commerce Department determined that subject imports posed national security threats, but because Section 232 remedies are viewed as extraordinary, only two of these investigations led to tariff actions.[46] The steel and aluminum Section 232 investigations resulted in import tariffs of 25 percent and 10 percent, respectively.‡[47]

Section 301

To date, Section 301 of the Trade Act of 1974 has been the most versatile and significant tool for responding to China's non-market policies. Section 301 of the Trade Act of 1974 provides the USTR broad discretion to suspend trade agreement concessions or impose import restrictions if a U.S. trading partner is found violating commitments or engaging in an act, practice, or policy that is "unreasonable or discriminatory and burdens or restricts [U.S.] commerce."[48] Prior to 2017, Section 301 had largely fallen out of use as a trade remedy tool, with 119 investigations having occurred from 1975 to 2000 and only five between 2000 and 2016.§[49] The USTR initiated a broad Section 301 investigation in August 2017 into China's technology transfer, IP, and innovation policies. That investigation ultimately became the basis for the United States to impose significant tariffs on two-thirds of all imports from China in four waves of tariff actions between July 2018 and September 2019, impacting $335 billion in trade¶ with duties ranging between 7.5 percent

*Although a wide variety of actors may trigger the initiation of a Section 232 investigation—including any "interested party," the head of "any department or agency," and the secretary of commerce—investigations have historically been rare. Brock Williams of the Congressional Research Service notes that prior to the 2017 investigations under the Trump Administration, Section 232 action was last taken in 1986, with a total of just 26 investigations and six actual trade enforcement action occurring before 2017. Brock R. Williams, "Trump Administration Tariff Actions: Frequently Asked Questions," *Congressional Research Service* CRS R 45249, May 18, 2021, 5.

†The use of Section 232 gives the Commerce Department and the president broad authority to examine imports that may threaten national security but otherwise would not be prohibited under the terms of existing trade agreements or the WTO. The majority of the Section 232 investigations took place during the height of the Cold War in response to increased threats facing U.S. national security. Doug Palmer, "The Cold War Origins of Trump's Favorite Trade Weapon," *Politico*, July 5, 2018.

‡The tariffs were not just aimed at China; initially they were imposed on most steel and aluminum imports into the United States. Various countries, including the EU, Japan, and the United Kingdom, later negotiated tariff suspensions on set volumes of imports. China along with other trading partners raised a WTO case against the Section 232 tariffs in 2018. The initial findings of the panel concurred that the Section 232 tariffs went beyond the scope of allowed national security measures under the WTO, and the United States has appealed the case, effectively stopping further developments in the decision-making progress. Alan H. Price et al., "United States Notifies Intent to Appeal WTO Panel Reports on Section 232 Steel and Aluminum Measures," *Wiley*, January 30, 2023; Rachel F. Fefer et al., "Section 232 Investigations: Overview and Issues for Congress," *Congressional Research Service* CRS R 45249, May 18, 2021, 8–11, 41–44.

§Among the five Section 301 investigations, in 2010 the Obama Administration launched an investigation into China's policies affecting green technologies, following industry petition. Office of the U.S. Trade Representative, *United States Launches Section 301 Investigation into China's Policies Affecting Trade and Investment in Green Technologies*, October 15, 2010.

¶These figures are relative to 2017 levels, and the targeted products amounted to 66 percent of all imports from China. The United States announced plans to implement tariffs on another

and 25 percent.*[50] Between July 2018 and May 2024, the United States assessed $215 billion in duties under the Section 301 action, or roughly $36 billion per year.[51] For comparison, U.S. Customs and Border Protection collected $35 billion in duties across all countries and trade authorities in fiscal year (FY) 2017.[52] According to Jamieson Greer, a partner in the International Trade team at King & Spalding, these tariffs were a key piece of a new approach and enforcement posture toward China that aimed to "level the playing field and potentially create an environment where negotiations for improved terms of trade were possible."[53]

In May 2024, the United States modified the Section 301 tariffs to respond to emerging sources of Chinese overcapacity. Following the completion of a review of the 2018–2019 tariffs, the USTR determined to continue the Section 301 duties already in place while announcing new tariffs on products that "are targeted by China for dominance or are sectors where the U.S. has recently made significant investments."[54] These tariffs notably included a 100 percent tariff on made-in-China electric vehicles (EVs), effectively doubling the cost of importing an EV from China.†[55] The EV duties are intended to align with ongoing U.S. efforts to boost domestic EV production and promote EV production jobs in the United States, which could otherwise be uncompetitive with low-cost vehicles sold by BYD and other Chinese EV automakers that have benefited from years of heavy subsidies.[56] Additional tariffs were also placed on imports of Chinese EV batteries, personal protective equipment, certain critical minerals, semiconductors, and ship-to-shore cranes.[57] These actions placed tariffs on an additional $18 billion in imports from China, though many have extended phase-in periods.[58] As a reflection of Section 301's newly elevated role in U.S. trade strategy toward China, the USTR is considering the need for further action under the statute. In April 2024, the USTR launched a new Section 301 investigation into China's practices in the shipbuilding, maritime, and logistics sectors.‡[59]

The "Phase One" Trade Deal

The Section 301 tariffs became the basis for broad negotiations with China over a variety of trade issues. In January 2020, these negotiations culminated in a trade agreement with China, often called the "Phase One" Economic and Trade Deal, wherein China agreed to address key U.S. concerns in exchange for a reduction in Section 301 tariffs.§[60] China agreed to enhance IP protections, terminate

roughly $151 billion in goods in December 2019, but it suspended this action because of ongoing trade negotiations with Beijing. Chad P. Bown, "The U.S. China Trade War and Phase One Agreement," *Peterson Institute for International Economics*, February 2021, 13, 28.

*The list of Section 301 tariffs issued in September 2019 applied an initial duty of 10 percent to $120 billion in Chinese goods. This tariff was reduced to 7.5 percent as part of the Phase One trade agreement. Office of the U.S. Trade Representative, *United States and China Reach Phase One Trade Agreement*, December 13, 2019.

†U.S. imports of EVs from China totaled $368 million in 2023, equal to 2 percent of the U.S.'s imports of EVs from all sources. U.S. Census Bureau, *USA Trade Online*, September 9, 2024.

‡A recent paper that constructs an economic model of Chinese subsidies found that China's shipbuilding industry received $86 billion (renminbi [RMB] 624 billion) in subsidies, and this policy support caused Chinese shipbuilders to increase their global market share by 40 percent. Panle Jia Barwick, Myrto Kalouptsidi, and Nahim Zahur, "Industrial Policy Implementation: Empirical Evidence from China's Shipbuilding Industry," *NBER Working Paper*, December 2023, 4.

§As part of the Phase One agreement, the United States reduced the tariff for products on "List 4A," referring to Section 301 actions the USTR took to expand the Section 301 action in September 2019. The duty rate for this subset of goods was reduced from 15 percent to 7.5 per-

policies that force technology transfer from U.S. companies, and increase purchases of certain U.S. products by specified amounts, among other commitments.

While the COVID-19 pandemic created global disruptions that resulted in a significant change to economic conditions, China fell far short of fulfilling its commitment to purchase an additional $200 billion worth of U.S. products over 2017 levels before the end of 2021. According to calculations by economist Chad Bown,* China's purchases of covered products reached only 58 percent of its purchase commitments by the end of 2021.[61] Even aside from the purchasing commitments, however, the USTR assessed that China has failed to meet many of its Phase One obligations. Though China's 2020 implementation of the Foreign Investment Law and 2021 amendments to the Copyright Law, Patent Law, and Criminal Law partially met or fulfilled some of the elements of the Phase One deal, many technology transfer-related policies continue. In its Statutory Four-Year Review of the Section 301 measures, the USTR stated, "Instead of pursuing fundamental reform, the Chinese government largely took superficial measures aimed at addressing negative perceptions of its technology transfer-related acts, policies, and practices. At the same time, China has persisted and even become more aggressive, particularly through cyber intrusions and cybertheft, in its attempts to acquire and absorb foreign technology."[62]

Effects and Consequences of U.S. Trade Action on China

U.S. trade policy since 2017 has had wide-ranging impacts on the U.S. economy and promoted specified trade objectives to varying degrees. In its statutory review of the China Section 301 tariff action in 2024, the USTR assesses that the Section 301 tariffs were "effective in encouraging China to take steps toward eliminating the investigated technology transfer-related acts, policies, and practices, and in counteracting such policies. The Section 301 tariffs have also been effective in reducing the exposure of U.S. persons and companies to China's technology transfer-related acts, policies, and practices."[63] Following the tariffs, China's share of total U.S. imports declined steadily, falling from 20 percent in 2017 to 13.1 percent in the first eight months of 2024.†[64] Across sectors covered by Section 301 tariffs, the USITC estimates that tariffs caused imports to decline on average by 13 percent between 2018 and 2021.[65] Other economies, including Mexico and Vietnam, are emerging as key suppliers of intermediate and final goods for the U.S. economy. (For more on the emerging signs of supply chain diversification from China, see Chapter 1, "U.S.-China Economic and Trade Relations (Year in Review).")

There are differing assessments on the employment and broader economic impact of the tariffs. The USTR notes that the U.S. tar-

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cent, while other products subject to the China Section 301 action kept a 25 percent duty. Chad P. Bown, "U.S.-China Trade War Tariffs: An Up-to-Date Chart," *Peterson Institute for International Economics*, April 6, 2024.

*In January 2024, Dr. Bown was sworn-in as the Chief Economist of the U.S. Department of State.

†Due to a lack of data collected on cross-border e-commerce imports from China that utilize the de minimis exception, these figures likely underrepresent China's actual share of the U.S. import market. For more, see Chapter 4, "Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws."

iffs and Chinese counter-tariffs "have had small negative effects on U.S. aggregate economic welfare, positive impacts on U.S. production in the 10 sectors most directly affected by the tariffs, and minimal impacts on economy-wide prices and employment."*[66] Though the tariffs increased costs for some U.S. businesses and consumers, when averaged across the entire U.S. economy, the effect was small† and overwhelmed by inflationary pressures stemming from the COVID-19 pandemic.[67] The USITC estimated that the tariffs were responsible for a 0.2 percent increase in the price of covered products produced domestically between 2018 and 2021, although prices increased by as much as 15–25 percent in a select number of sectors, including textiles, semiconductors, and motor vehicle parts.‡[68] The USITC's modeling also found that the Section 301 tariffs caused domestic production to expand by between 1.2 and 7.5 percent in the ten sectors most directly affected by the tariffs.[69] As Mr. Greer highlighted in testimony before the Commission, total U.S. manufacturing employment grew by 500,000 workers between 2016 and 2019.[70] Though this increase in employment occurred after years of stagnant manufacturing jobs growth prior to the tariffs, there are differing assessments on employment effect of the tariffs.[71] For instance, in the steel sector, the Economic Policy Institute highlights how investments announced following the Section 232 steel action in 2018 directly created 3,200 jobs.[72] However, other estimates show net job losses when accounting for employment in industries downstream from the steel sector. Economists Kadee Russ and Lydia Cox calculate that the March 2018 tariffs on steel and aluminum led to 75,000 fewer jobs in manufacturing by mid-2019.[73] Nonetheless, the United States added nearly 250,000 manufacturing jobs in 2018 and at the fastest growth rate since the 1980s.[74] Various studies find that the overall impact of the tariffs and China's retaliatory measures was mixed and may have had a small negative impact on overall employment in 2018 and 2019, although total U.S. employment continued to grow during those years.[75] If there was short-term pain, in Mr. Greer's assessment, it should be weighed against the "cost of doing nothing or underestimating the threat posed by China."[76]

Circumvention of U.S. Tariffs Likely Weakened Their Effectiveness

The success of U.S trade policies against China was at least partially undermined by Chinese exporting firms using various tactics to circumvent or evade the increased tariffs. These measures include: (1) transshipment or re-routing of products through third countries to avoid China-specific duties, (2) fraudulently underval-

*The USTR did not conduct its own economic analysis of the tariffs and instead synthesized the results from numerous studies in academic literature as well as the findings from the USITC report on the impact of the Section 301 tariffs on ten sectors. U.S. Trade Representative, *Four-Year Review of Actions Taken in the Section 301 Investigation: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, May 2024, 64.

†Imports from China amounted to 2.6 percent of GDP in 2018. U.S. Census Bureau, *Trade in Goods with China*, September 9, 2024; U.S. Department of Commerce, Bureau of Economic Analysis, *Gross Domestic Product*.

‡The import data used in the USITC's models do not account for shipments valued under $800 that utilize the de minimis exception. Because low-value goods are more likely to utilize the de minimis exception, their exclusion from USITC's model could bias their price coefficients, particularly in industries like textiles where cross-border e-commerce trade has grown rapidly.

uing or mis-invoicing imports to U.S. customs to lower the assessed duty, and (3) increased use of duty-free entry for small e-commerce shipments under the de minimis exception. (For more on the increased usage of these channels and the resulting problems for U.S. customs and regulatory officials, see Chapter 4, "Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws.") The extent of tariff avoidance through these tactics is unclear due to limited data and enforcement capacity. However, in its four-year review of the Section 301 tariffs, the USTR acknowledged the challenge posed by customs duty evasion.[77] China also took other actions to mitigate some of the impact of trade tensions on Chinese firms (see textbox below).

China's Efforts to Offset the Economic Impact of Trade Actions

China designed its retaliation against U.S. trade measures to maximize impact on the United States while minimizing harm to Chinese exporters. China's retaliatory tariffs covered roughly 60 percent of U.S. imports relative to 2017 levels, raising the average tariff on U.S. goods to 21.1 percent.[78] A number of studies provide evidence that China strategically targeted U.S. products in what it viewed to be politically sensitive areas.*[79] China's retaliatory action most notably included tariffs on nearly all U.S. agriculture products, but China also raised duties on a broad range of U.S. intermediate inputs used by its manufacturing sector.[80] By 2020, Chinese retaliatory tariffs covered roughly 38 percent of U.S. manufactured goods imports, equivalent to $30 billion in 2017 terms.[81] However, China refrained from placing tariffs on aviation components and semiconductor products and equipment, suggesting it avoided raising tariffs on key products related to its own technological development priorities.[82] Instead, China appeared to target products that had alternative suppliers to the United States, ensuring China-based firms could substitute out U.S. inputs impacted by China's retaliatory measures.† China also reduced its most-favored-nation tariff across a range of products from all other countries shortly after the start of the trade war, further incentivizing China-based firms to shift away from the United States.[83] China's average tariff on goods from other countries fell from 8 percent to 6.5 percent since 2018.‡[84]

*There is some evidence that China's retaliatory tariffs introduced in 2018 were correlated with Republican candidates losing vote share in the 2018 House elections relative to the results in 2016. However, the magnitude of this impact varies across different studies based on different econometric modeling decisions. Emily J. Blanchard, Chad P. Bown, and Davin Chor, "Did Trump's Trade War Impact the 2018 Election?" *Journal of International Economics* 148 (2024): 1–23; David Autor et al., "Help for the Heartland? The Employment and Electoral Effects of the Trump Tariffs in the United States," *NBER Working Papers*, January 2024.

†Economists Davin Chor and Bingjing Li find that China's imports of intermediate goods picked up from the rest of the world in the first few months after China imposed retaliatory measures on the United States, suggesting that other economies filled in for tariffed U.S. products. Davin Chor and Bingjing Li, "Illuminating the Effects of the U.S.-China Tariff War on China's Economy," *Journal of International Economics* 150 (July 2024): Appendix 16.

‡China's most-favored nation cuts substantially overlapped with the list of U.S. products subject to Chinese retaliatory tariffs, suggesting these reductions aimed to further incentivize Chinese firms to switch away from U.S. suppliers. Between January 2018 and June 2019, China reduced the most-favored nation tariff for 4,646 product lines, nearly three-quarters of which were covered by China's retaliatory duties on the United States. Chad P. Bown, Euijin Jung, and

China's Efforts to Offset the Economic Impact of Trade Actions—*Continued*

China implemented other measures to lessen the impact of the trade tensions on China's economy. China's government absorbed some of the cost of the U.S. tariffs by reducing taxes on domestic export manufacturers. China decreased the gross value-added tax (VAT) rate from 17 percent in 2018 to 13 percent by the end of 2020 while also increasing the VAT rebate on exports over the same time period.[85] The share of Chinese exports that faced an effective VAT rate of zero increased from 5 percent in 2017 to about 50 percent by the end of 2020.[86] China also made it easier for firms to access its processing trade regime, under which manufacturers approved by Chinese authorities can import inputs duty free, provided they are used to produce exports.[87] After 2018, the share of U.S. imports that entered China as processing trade rose sharply, suggesting that firms made greater use of the customs arrangement to negate the impact of tariffs; notably, the processing trade share of imports from other countries remained largely unchanged.[88] Nevertheless, the sum of China's responses led to a diversion of imports away from the United States—by 2023, the United States was the source for just 6.5 percent of China's total imports, down from 7.3 percent before 2018.[89]

The existing U.S. tariff architecture is not well-suited to deter the import of products made in other countries using Chinese components, creating an opportunity for Chinese exporters to continue accessing the U.S. market by moving final assembly outside of China. The Section 301 tariffs on China are designed to duty imports directly from China-based producers. However, under the methodology typically used to determine duty rates, the tariffs generally do not apply to exporters based outside of China that utilize Chinese components, provided that the inputs are modified in such a way to meet the customs standard for the applicable rule of origin (often requiring a "substantial transformation").[90] This creates a situation where the United States may continue to import Chinese value-added content embedded via third-country supply chain linkages. A number of recent studies note that trade data suggest producers in third countries, such as Vietnam, relied at least in part on Chinese inputs to ramp up their exports to the United States since 2018.[91] Chinese EV makers are reportedly seeking to set up production in Mexico, which could enable them to use Mexico-based operations as a backdoor to import low-cost vehicles into the U.S. market and avoid the 100 percent duties on Chinese EVs under Section 301.[92] By statute, Section 301 duties apply only to the trading partner in question and do not cover products produced in third countries.*

Eva (Yiwen) Zhang, "Trump Has Gotten China to Lower Its Tariffs. Just Toward Everyone Else," *Peterson Institute for International Economics*, June 12, 2019.

*Other U.S. trade authorities enforced against China account for this dynamic. Section 201 duties are assessed on imports regardless of country of origin, while the Section 232 steel and aluminum duties were assessed on other countries that processed unrefined products made in China for the U.S. market. In the AD/CVD context, the U.S. Commerce Department can also conduct scope and circumvention inquiries to determine and implement remedies if producers in third countries rely on products subject to an AD/CVD order.

Though Mr. Greer acknowledges that even incremental movements of supply chains represent an improvement over the status quo, he notes that third-country workarounds can be addressed by "extending the effect of the measures to imports from Chinese headquartered companies or adjusting the rules of origin for goods subject to the Section 301 tariffs."[93] Tools to accomplish this include utilizing rules of origin requirements in U.S. free trade agreements with other trading partners.

Challenges in Aligning Tariff Measures with Strategic Objectives

The findings of the China Section 301 investigation into China's technology transfer practices have been used to justify tariffs on a range of products that extend well beyond the original scope of the investigation, leading some to assess that the trade measures lack strategic clarity. Mr. Greer testified before the Commission that the China Section 301 tariffs were designed to target products related to the Made in China 2025 strategy, a national industry policy strategy released in 2015 to promote ten high-tech industries.[94] An analysis by Mary Lovely and Yang Liang at the Peterson Institute of International Economics compared the products included in the initial Section 301 tariff action—which was implemented on July 6, 2018, and covered $34 billion in Chinese imports—to a list of sectors identified by the Commerce Department as patent-intensive.[95] They found that 80 percent of the products in the initial tariff action fell within these industries, consistent with the technologies the USTR identified as subject to extensive Chinese technology transfer practices in its Section 301 investigation.[96] However, subsequent tariff waves were scoped much more broadly. According to Dr. Lovely, these Section 301 actions placed greater focus on less knowledge-intensive and more labor-intensive sectors.[97] Because of the expansive scope of the measures, she assessed in testimony before the Commission that "U.S. trade policy objectives have not been clearly linked to the trade policy instruments we currently deploy."[98] Some argue that such a broad approach is necessary to respond to the pervasiveness of China's non-market practices, while others advocate for focusing U.S. trade restrictions on a set of products with national security implications and removing barriers to trade with China in less strategically important areas.[99] Following the USTR's 2024 Section 301 review, the U.S. government maintained and selectively reviewed the existing broad-ranging tariff measures, and it also selectively expanded the tariff measures to industries where surging Chinese manufacturing capacity posed a clear threat to ongoing efforts to bolster U.S. domestic production.[100]

The China Section 301 tariffs impacted foreign firms in China and raised production costs for U.S.-based firms with Chinese supply chains, reflecting the challenge of targeting tariffs solely at Chinese producers that benefit from state support. In their review of the Section 301 tariff list, Dr. Lovely and Dr. Liang found that products targeted for tariffs were primarily sourced from foreign affiliates operating in China, with the exception of tariffs on China's chemical sector (see textbox on "Chinese Supply Chains Are Reducing Dependence on Foreign-Invested Enterprises (FIEs)").[101] In the aggregate,

total U.S. trade with China only amounted to 3.2 percent of U.S. gross domestic product (GDP) in 2018, meaning most U.S. economic activity had limited reliance on China.*[102] The Section 301 tariffs did increase production costs for U.S. firms using China as an export production platform or using intermediate inputs from China. Costs for U.S.-based producers that relied on supply chains linked to China also rose. By 2020, 93 percent of Chinese intermediate goods imports were subject to higher duties, compared to 69 percent of consumer goods and 47 percent of capital equipment.[103] One study found that for U.S. exporting firms with supply chain links to China, the tariffs on imported inputs effectively acted as a 2 percent tariff on their exports.†[104] The USTR engaged in an exclusion review process to mitigate these effects. In addition, an increased number of U.S.-based exporters applied to operate within a U.S. foreign trade zone (FTZ), which provides lower tariffs for imported inputs incorporated into exported products. The share of U.S. merchandise imports from China entering under special duty provisions for warehousing or an FTZ increased from 11 percent in 2017 to 17 percent in 2023, with a total of $75 billion in inputs entering these zones.‡[105]

Chinese Supply Chains Are Reducing Dependence on Foreign-Invested Enterprises (FIEs)

Foreign (non-Chinese) firms in China have historically been an important source of China's exports. Recently, however, domestic Chinese firms have overtaken them as China's leading exporters. In 2014, foreign-invested enterprises (FIEs)—which include subsidiaries of multinational enterprises, Sino-foreign joint ventures, and Hong Kong and Macau-funded enterprises—accounted for 46 percent of China's total exports.[106] In 2014, 60 percent of China's U.S.-bound exports originated from FIEs, reflecting the higher reliance on China as a hub for offshore production within U.S. supply chains.[107] Though more recent data on China's exports to the United States by FIEs are unavailable,§ FIEs' share of China's

*Though China is the largest supplier of imported inputs for manufacturing, most of the goods used in U.S. manufacturing are sourced domestically. One study estimates that the average U.S. manufacturing sector sources 88 percent of manufactured inputs by value added from within the United States. Richard Baldwin, Rebecca Freeman, and Angelos Theodorakopoulos, "Hidden Exposure: Measuring U.S. Supply Chain Reliance," *Brookings*, September 27, 2023, 16.

†In some cases, U.S. manufacturers face a tariff inversion, where tariffs on inputs used in manufacturing exceed the value of the finished good, disadvantaging domestic production compared to imports. For example, the CEO of the U.S.-based television producer Element asserts that it faces an inverted tariff due to U.S. duties on LCD panels from China, and it is challenged to compete on price with televisions assembled in Mexico or other countries and imported into the United States. David Baer, written testimony for U.S. Senate Finance Committee, *Hearing on U.S.-China Relations: Improving U.S. Competitiveness Through Trade*, April 22, 2021, 10.

‡In contrast, the share of U.S. imports from all other countries that entered a warehouse or FTZ fell from 10 percent in 2017 to 7 percent in 2023. U.S. Census Bureau, *USA Trade Online*, September 9, 2024.

§China only publishes data on total exports by FIEs and does not release data that show exports by destination. The 2014 estimate on exports by FIEs to the United States was calculated using microdata from China's customs agency. Commission staff were unable to locate updated calculations based on these data. U.S. trade data on imports from related parties, where the importer has some form of a corporate relationship with the China-based exporter, suggest the role of FIEs in China's U.S.-bound exports followed the trend in its overall exports, though the related party data only captures a portion of all FIE transactions given its focus on U.S.-based multinational enterprises and exporters and importers frequently leaving this data field empty on customs forms. U.S. imports from related parties in China fell from 29 percent in 2014 to 20 percent in 2023. U.S. Census Bureau, *Imports and Exports by Related Parties*, July 3, 2024; Mary Lovely and Yang Liang, "Trump Tariffs Primarily Hit Multinational Supply Chains, Harm U.S. Technology Competitiveness," *Peterson Institute for International Economics*, May 2018, 2.

Chinese Supply Chains Are Reducing Dependence on Foreign-Invested Enterprises (FIEs)—*Continued*

total exports have fallen over the past decade. Between 2014 and 2023, FIEs' share of China's overall exports fell from 46 percent to 28 percent.[108] This decline was likely even sharper within advanced technology products; FIEs' share of exports of "high-tech new products"—a category defined by China's National Bureau of Statistics—dropped from 84 percent in 2011 to 59 percent in 2020.*[109] Though foreign multinationals and global supply chains continue to play a significant role in China's exporting sector, particularly for advanced technology products, domestic Chinese firms are driving a growing share of China's export activity.

Export Controls

China asserts itself as a significant military power, and export controls have emerged as the United States' policy tool of choice for denying China access to critical dual-use technologies and hindering China's capacity to develop such technologies on its own. Adding to the complexity of crafting export control policy toward China is the country's military-civil fusion policy, which blurs the distinction between Chinese commercial enterprise and China's military. With mounting concerns over China's military modernization, growing aggressiveness in the South China Sea, and posture toward Taiwan, the question of how to restrict sensitive technologies that could give China a military edge has taken on added urgency in recent years.†

China has capitalized on years of broad and mostly unfettered access to U.S. and allied foundational technologies by making significant leaps in its domestic capabilities. As U.S. policymakers have shifted their assessment of the threat from China and recognized the growing importance of certain types of technologies like advanced semiconductors, export controls have taken on new significance for their potential ability to help the United States maintain its technological and military edge. The evolution in export control policies faces added challenges of carefully identifying controlled technologies, a fast-moving technological landscape, and fragmented supply chains. New export controls must contend with questions on scope, enforcement, and structure to optimize their effect.

At the same time, in the Export Control Reform Act, Congress required export controls to be evaluated on an ongoing basis to ensure they do not inadvertently harm U.S. technological leadership, which "requires that United States persons are competitive in global markets."[110] Congress has further stated as export control policy that "[e]xport controls applied unilaterally to items widely available from foreign sources generally are less effective in preventing end-users

*Chinese statistics distinguish the high-tech exports from firms invested by Hong Kong, Macau, and Taiwan entities from those of all other foreign-invested firms. The latter groups' share of China's high-tech exports fell from 70.5 percent in 2011 to 25 percent in 2020. Scott Kennedy, "The Private Sector Drives Growth in China's High-Tech Exports," *Center for Strategic and International Studies*, April 28, 2022.

†This discussion omits the essential issue of export controls for human rights reasons, as in the case of foreign governments using technology to surveil activity, restrict movement, and otherwise control or limit the rights of their citizens.

from acquiring those items. Application of unilateral export controls should be limited for purposes of protecting specific United States national security and foreign policy interests."[111] To underscore the importance of this statement of policy, Congress requires the secretary of commerce to report annually on the impact of export controls on U.S. scientific and technological leadership.[112]

Changing Design of Export Controls

The United States' approach to export controls has evolved as the country's traditional commitments to the principles of open trade have collided with the realities of adversarial nations seeking to use U.S. technology to further their military aims. The Export Control Reform Act (ECRA) of 2018, motivated by increasing concerns regarding the dual-use technology trade between the United States and China, forms the foundation of the current U.S. export control regime toward China.[113] ECRA gives expansive authority to the president to control the export, reexport, and transfer of items by U.S. or foreign nationals and corporations. It also provides "U.S. persons" authority to limit the ability of U.S. individuals and companies to provide support for certain foreign military-focused activities.[114] Unlike prior export control statutes, ECRA explicitly regards economic security as a component of national security and has no expiration date.*[115]

U.S. Export Control Infrastructure

The Export Administration Regulations (EAR) implement U.S. export control policy for goods and destinations, the license applications process used by exporters, and the Commerce Control List.†[116] Much of the EAR's infrastructure predates ECRA, though ECRA expanded and implemented notable reforms within the EAR.‡[117] ECRA created the statutory authority for the Entity List, a list of foreign persons and end uses that are determined to be a threat to U.S. national security. Exports to persons on the Entity List broadly require licensing for all items subject to the EAR. Most persons on the list face a presumption of denial for licenses.[118] In recent years, the Entity List has been increasingly used to target key Chinese firms with direct ties to the People's Liberation Army, such as semiconductor manufacturer SMIC.§[119]

*The act also mandates a review of export license requirements. The review strengthens the licensing process for countries subject to a comprehensive U.S. arms embargo, like China, and mandates as part of the licensing process an assessment of the impact of granting a license on the U.S. defense industrial base.

†The Commerce Control List is a list of dual-use technologies subject to controls under the EAR. The Bureau of Industry and Security (BIS) within the Department of Commerce administers the EAR. Paul K. Kerr and Christopher A. Casey, "The U.S. Export Control System and the Export Control Reform Act of 2018," *Congressional Research Service* CRS R 46814, June 7, 2021.

‡Separate regulations control nuclear materials and technology and defense articles and services. U.S. law has expanded to prohibit arms sales to China since 1989. The United States also maintains a policy of denial for exports of satellite and space equipment to China. Karen M. Sutter and Christopher A. Casey, "U.S. Export Controls and China," *Congressional Research Service* CRS IF 11627, March 24, 2022.

§While the Entity List is the primary list containing parties of concern, BIS also maintains a Denied Persons List, which contains entities that are fully denied export privileges, and an Unverified List, which contains entities that cannot receive license exceptions and require additional scrutiny. U.S. Department of Commerce Bureau of Industry and Security, *Denied Persons List*, 2024; U.S. Department of Commerce Bureau of Industry and Security, *Unverified List*, 2024.

U.S. Export Control Infrastructure—*Continued*

The EAR also regulates the transfer of controlled technologies to a foreign person within the United States, often called "deemed exports," by requiring a license. Such licenses are typically used by universities, advanced technology research and development institutions, biochemical firms, and the medical and advanced computing sectors, which often rely on highly trained foreign persons to support their research and development (R&D) activities.[120] Some concerns have been raised that China is seeking to take advantage of the United States' open research environments to circumvent export controls, heightening the importance of the deemed export rules.[121]

A powerful but—until recently—rarely used tool is the Foreign Direct Product Rule (FDPR), which regulates the reexport and transfer of any foreign-made items if their production directly involves certain technology, software, or equipment that originates from the United States, even if the item was produced outside of the United States by a foreign entity.[122] The Commerce Department has recently utilized the FDPR in conjunction with the Entity List to limit the ability of targeted entities to sidestep U.S. controls by sourcing restricted products from companies outside the United States. For example, the department used the rule against China in 2020 to help improve and expand the effectiveness of controls targeting Huawei.* Specifically, Commerce used the FDPR to expand controls that restricted direct exports of U.S. semiconductors by also controlling exports to Huawei of products made with U.S. technology (even products made wholly outside the United States by foreign firms) that support the manufacture of semiconductors.[123] (For more on Huawei, see "Effects of Export Controls" later in this chapter.) In mid-2024, the Department of Commerce announced an expansion of the FDPR rules, albeit with exclusions for key semiconductor manufacturing equipment-producing countries like Japan, the Netherlands, and South Korea, by (1) prohibiting exports to more Chinese end users and (2) lowering the percentage of U.S. content required to trigger the rule.†[124]

ECRA tasked the Administration with creating an interagency process to define and place controls on emerging and foundational technologies.‡ However, the Commission's 2023 Annual

*Before the FDPR was updated, Huawei was able to maintain access to the supply of advanced foreign chips because it could still purchase chips produced by non-U.S. firms made using U.S. technology (e.g., semiconductor manufacturing equipment). Given the widespread prevalence of U.S. technology at some level in most steps of the semiconductor design and manufacturing process, the expanded FDPR rule significantly expanded the practical scope of the controls. Gregory C. Allen, "In Chip Race, China Gives Huawei the Steering Wheel: Huawei's New Smartphone and the Future of Semiconductor Export Controls," *Center for Strategic and International Studies*, October 6, 2023.

†In September 2024, the U.S. Department of Commerce expanded export controls on semiconductors, quantum computing items, and other technologies. U.S. Department of Commerce Bureau of Industry and Security, "Commerce Control List Additions and Revisions; Implementation of Controls on Advanced Technologies Consistent with Controls Implemented by International Partners," *Federal Register* 89:72926 (September 6, 2024).

‡This is generally understood to cover the White House's Critical and Emerging Technologies List: advanced computing, advanced engineering materials, advanced gas turbine engine technologies, advanced manufacturing, advanced and networked sensing and signature management, advanced nuclear energy technologies, AI, autonomous systems and robotics, biotechnologies,

U.S. Export Control Infrastructure—*Continued*

Report identified that "despite increasing the number of specifically named Chinese entities barred from receiving technology, the Department of Commerce's Bureau of Industry and Security (BIS) has made limited progress in expanding the scope of technologies controlled. In 2018, ECRA tasked the agency with identifying 'emerging and foundational' technologies and imposing controls where necessary, but BIS has not identified any foundational technologies."[125] In a May 2022 statement, BIS announced it would no longer attempt to distinguish between emerging and foundational technologies.[126] Instead, BIS would refer to such technologies as Section 1758 technologies since there were definitional challenges to distinguishing between the two and there were few practical implications of the distinction, noting that "the categorization of the technologies has sometimes delayed the imposition of controls."[127] In his written testimony to the Commission, partner at the law firm Akin and a former Assistant Secretary of Commerce for Export Administration in BIS Kevin Wolf stated that "BIS has published the first unilateral controls on [emerging and foundational technologies] with its October 2022 [semiconductor-related] rule described above, which clearly meets the spirit and purpose of Section 1758, although not the letter of the section."[128]

Controls on advanced semiconductors reflect a realization that because certain technologies are so foundational to advanced military capabilities, they need to be controlled more broadly than previously envisioned for dual-use technologies. In testimony before the Commission, nonresident fellow at the Carnegie Endowment for International Peace Peter Harrell commended the October 2022 semiconductor controls. He argued that they leveraged chokepoints effectively, delineated clear objectives, and were devised to reduce diversions and workarounds, reflecting lessons learned from previous controls targeting specific Chinese firms.[129] BIS export controls on semiconductors expanded in 2022 from an approach that covered a small number of companies in China to broader country-based controls on both semiconductors and semiconductor manufacturing equipment. BIS expanded semiconductor controls again in October 2023 to cover additional types of semiconductors and semiconductor manufacturing equipment. Mr. Harrell sees the flexibility and iterative approach shown by BIS as strengths that allow the United States to "address gaps and workarounds as they are identified" and "reduce the odds of unintended consequences."[130] A similar iterative process could be used to expand controls as future emerging technologies take on stronger national security implications, including quantum information science, AI (to the extent not covered by existing controls on advanced semiconductors needed for AI systems),

communication and networking technologies, directed energy, financial technologies, human-machine interfaces, hypersonics, networked sensors and sensing, quantum information technologies, renewable energy generation and storage, semiconductors and microelectronics, and space technologies and systems. John P. Barker et al., "White House Releases Updated Critical and Emerging Technologies List," *Arnold & Porter*, February 28, 2024.

robotics, and biotechnology. (For more on U.S.-China technology competition in these sectors, see Chapter 3, "U.S.-China Competition in Emerging Technologies.")

While recent attention has focused on advanced technology products, particularly the most advanced semiconductors and semiconductor manufacturing equipment, some experts have recommended that the United States review more traditional dual-use technologies to identify whether other sensitive chokepoints exist that could hinder China's ability to develop or advance its own dual-use industries—for example, civilian aerospace. China's leadership has repeatedly expressed anxiety about its reliance on certain high-end electronic components and specialized steel alloys that are manufactured by a small number of U.S. or allied companies; these inputs currently have no viable high-end Chinese competitors and will likely take years or more to duplicate.[131]

Plurilateral vs. Unilateral Export Controls

Due to the interconnected nature of the global trade ecosystem and the lack of tangible methods to track or control the final destinations of physical goods, the effectiveness and sustainability of export controls relies on the cooperation of allies and partners. The United States has traditionally preferred to take a multilateral approach to export controls for three reasons.[132] First, this approach ensures maximum effectiveness of controls since the controls block trade from a broader range of potential sources of the technology for the targeted country or entity.[133] Second, a multilateral approach improves enforcement; absent geolocation solutions that could remotely shut off technology if it travels outside of a proscribed area, preventing reexport of restricted goods relies on allied cooperation, tracking, and enforcement systems.[134] Third, broad adherence to a uniform set of controls ensures that firms in other countries do not merely "backfill" U.S. exports, which would both limit the effectiveness of the controls and potentially harm U.S. interests by redirecting revenue needed to sustain R&D away from U.S. firms to their international competitors.[135] In the long run, unilateral controls can create a structural regulatory and economic incentive for U.S. companies and their foreign competitors to develop technologies outside the United States with non-U.S. technology and content. This would undercut the U.S. export control goal of maintaining the country's technological leadership.

Experience, however, indicates that U.S. leadership on export controls via unilateral implementation can convince allied countries to follow. Allied countries contend with their own domestic interests that are concerned about losing access to profitable markets. When the United States implements export controls ahead of allied countries, this can help allied governments overcome domestic political constraints.[136] Plurilateral controls also face constraints based on the varying legal powers of foreign governments and the resources available to devote to enforcement and ongoing international cooperation.[137]

The October 2022 controls on advanced semiconductor and semiconductor manufacturing equipment exports to China provide an example.[138] While U.S. companies design some of the most sophis-

ticated semiconductors and are among the leaders in semiconductor manufacturing equipment, companies in Europe and East Asia also play critical roles in the production of the chips themselves and certain high-end chip-making equipment.[139] Initially, the October 2022 rules were imposed unilaterally by the United States, though they did expand restrictions and licensing requirements on some foreign-produced items.[140] Aware of the need to multilateralize the rules for effectiveness, the United States designed the rules in consultation with key allies and worked to bring them along. Japan and the Netherlands, home to a number of companies key to advanced semiconductor production, have since imposed similar controls based on the U.S. rollout.[141] By moving first, the United States was able to quickly target China's ability to purchase key semiconductor manufacturing equipment supplied by the United States, which could have enabled more advanced domestic semiconductor manufacturing capability.[142] With the United States having demonstrated commitment to sacrificing some short-term economic gain for longer-term security, the Netherlands and Japan also agreed to limit their own exports of advanced equipment to China and to abstain from developing products that would have otherwise filled the gap left by U.S. firms.[143] In April 2024, Japan expanded its export controls to include additional types of semiconductor manufacturing equipment, following the United States' lead in its October 2023 expansion of its semiconductor controls.[144]

Still, most other countries have not imposed export controls to the same extent as the United States. Many countries currently lack a legal regime that allows them to target controls to specific entities of concern versus broader country-targeted controls, which have been the traditional approach of multilateral regimes. Other countries have also been hesitant to adopt analogues to the "U.S. persons" controls, which limit the ability of U.S. individuals and companies to support Chinese semiconductor development and ongoing servicing of certain equipment. While Japan's enhanced export controls on semiconductor equipment apply to all exports, not just China's, and Japan does implement catch-all end user restrictions related to the exports of certain technologies, it does not prohibit non-resident Japanese persons from servicing existing semiconductor machinery. The United States has pressed both Japan and the Netherlands to implement restrictions on ongoing maintenance and servicing of chip-making equipment already in China, without which their ongoing ability to produce cutting-edge chips would deteriorate.[145] This concern is significant given the capabilities and large amount of semiconductor manufacturing equipment China procured both before the controls were announced and between the announcement and when it went into effect.[146]

Traditional multilateral frameworks for export controls, set up to control conventional and nuclear weapons, have not adapted well to modern challenges of dual-use technologies and changes in geopolitical realities.* The four existing multilateral export control regimes are informal arrangements whereby member countries can coordinate policies and exchange information and best

*See Appendix I, "Current Multilateral Export Control Regimes" for a list of the current export control regimes.

practices for various types of weapons-related products and technologies.[147] Each regime is consensus-based and does not have legally binding rules. Some regimes have only limited self-reporting on adherence. Additionally, a drawback of consensus-based regimes is that a single state can veto important decisions like admitting new members or updating the control lists. Since 2021, Russia has effectively neutralized new decisions under the Wassenaar Arrangement, which serves to control dual-use items in addition to conventional arms.[148]

Bilateral and mini-lateral coordination could provide one solution, particularly for technologies with only a few commercial producers. Negotiations and controls could move faster, be nimbler, and potentially involve higher levels of coordination by having fewer countries involved.[149] As the United States has conferred with nations in smaller settings, a new consensus has emerged on the need to control items such as semiconductors. The informal cooperation between the United States, Japan, and the Netherlands with respect to semiconductor and semiconductor manufacturing equipment controls provides an example of the benefits of and possibilities for mini-lateral approaches. In a statement after a trilateral meeting with representatives from Japan and South Korea, the Department of Commerce affirmed the national security significance of semiconductors and referenced the role of the trilateral U.S.-Japan-Republic of Korea Disruptive Technology Protection Network, launched in April 2024, in combating illicit technology transfer.[150] Another example is the Trilateral Security Partnership between the United States, the United Kingdom, and Australia (AUKUS). In June 2023, the United States announced formal collaboration with its AUKUS partners—the UK and Australia—on export control enforcement, which would involve knowledge sharing and other cooperation.[151] This effort has helped spur AUKUS countries to align their relevant lists of controlled equipment and technology and permit exceptions where needed to ensure that trade in these goods between the three countries faces fewer restrictions.[152] Even with a small number of countries, challenges can emerge when export control policy is not aligned or allied governments lack the legal authority to impose the types of controls used by the United States. Progress in AUKUS has reportedly been slowed by the gap between the United States' controls and those of the UK and Australia.[153]

Export Control Outcomes at the U.S.-EU Trade and Technology Council

The U.S.-EU Trade and Technology Council (TTC) has helped advance transatlantic communication on export controls in some aspects, such as evasion and diversion efforts in exports to Russia and Iran, but significant challenges remain in coordinating controls on sensitive technology flows to China. In June 2021, the United States and the EU established the TTC in an effort to deepen ties and coordination on approaches to trade, technology, and security.[154] The TTC hosts ten working groups, including groups on export control cooperation and investment screening

Export Control Outcomes at the U.S.-EU Trade and Technology Council—*Continued*

cooperation.* Although China is not explicitly mentioned in the TTC's outlined mission, addressing China's increasing influence is a point of focus for the TTC. Toward that end, the TTC has produced tangible policy developments, including plans to operationalize a joint early warning mechanism for disruptions in semiconductor supply chains and the development of a joint AI Roadmap.[155] The United States and EU have also set up a platform to share information, including about export control licenses.[156]

In addition to EU-level efforts on a broad set of issues, individual European countries have also partnered with the United States to confront China's growing challenge. For example, in March 2023, the Netherlands joined the United States in restricting exports of semiconductor manufacturing technology to China.[157]

However, despite a broad commitment to "promote convergent control approaches on sensitive dual-use technologies," the TTC has not resulted in concrete goals or timelines for fundamentally reforming the multilateral export control system or creating a unified approach to export controls on China. In fact, it remains unclear if the TTC can be leveraged in this way.[158] Particularly, there is no EU level uniform export control policy, and EU member states retain autonomy over matters of national security and investment.[159]

Bringing Allies and Partners on Board

As Mr. Wolf testified, broad plurilateral controls will only be agreed to if allies believe the controls are in their national security interests, which requires outreach and engagement on the part of the United States. In testimony before the Commission in May 2024, regional experts on industry and trade policies argued that many allies and partners in the Asia Pacific, Latin America and the Caribbean, and Europe still do not understand or agree with the national security justification for U.S. controls.[160] To the extent allies believe export controls are about giving the United States an economic advantage rather than addressing national security concerns, they are less likely to implement parallel domestic export controls. In written testimony for the Commission, Mr. Wolf articulated his view that "if ever the justification for a new control is solely to help U.S. industry succeed economically, it will always eventually result in precisely the opposite outcome because no ally is going to agree to a plurilateral control just to help U.S. industry."[161] Furthermore, based on dialogues with foreign governments, think tanks, industry, and media, Mr. Wolf believes many countries outside the United

*Working groups include: tech standards, climate and green tech, secure supply chains, information and communications technology and services (ICTS) security and competitiveness, data governance and tech platform regulation, misuse of technology threatening security and human rights, export controls, investment screening, promoting small and medium-sized enterprises access to and use of digital technologies, and global trade challenges. Office of the U.S. Trade Representative, *U.S.-E.U. Trade and Technology Council (TTC)*.

States take the view that only items with a "direct and immediately identifiable relationship to the development, production, or use of a weapon" should be subject to export controls.[162]

Outreach to help countries better understand burgeoning national security threats has proven effective. The United States used extensive outreach efforts to expose the security threat of Chinese components in global telecommunications networks. Former U.S. Undersecretary of State for Economic Growth, Energy, and the Environment Keith Krach led a team working with allied countries' governments and telecom corporations to reduce the presence of equipment manufactured by Chinese firm Huawei in telecom infrastructure.[163] In addition to helping other nations understand the national security justifications for new controls on Huawei equipment, U.S. efforts at coordination with allies and like-minded countries also helped overcome fears of Chinese retaliation; by being a part of a wider group, each country had a buffer against Chinese pressure.[164]

Effects of Export Controls

U.S. and allied export controls have slowed China's technological advancement and made it more difficult for Russia to procure components for weapons systems. Maintaining and improving the effectiveness of export controls has required cooperation with allies, continuous adjustments and additions to the export control regime, and coordination with other economic tools like sanctions. However, experts continue to raise concerns over how long these initial successes will last as China focuses its efforts on becoming a self-sufficient manufacturer of legacy and high-end chips.

Enforcement in the United States and other countries has encountered a number of difficulties. Chinese firms stockpiled equipment from key Dutch and Japanese firms in the period between when export controls were announced and when they went into effect.[165] Even after the effective date of the controls, China continues to be a major buyer of lower-end semiconductor manufacturing equipment not subject to current controls. ASML's equipment sales to China surged in 2024.[166] Industry experts have claimed that South Korean* and Japanese† firms also continue to sell machines, components, spare parts, and materials to Chinese firms that U.S. firms would not be able to sell due to U.S. restrictions.[167] Chinese firms have also demonstrated the ability to use new or renamed shell companies to avoid enforcement.[168]

China has intensified efforts to design out foreign components in its chip-making processes. To build out domestic supply chains, the Chinese government provides financial support to subsidize Chinese chip companies using domestic technology and materials as much as possible in their production processes.[169] Huawei itself plays a key role in nurturing China's semiconductor ecosystem.[170] Since being

*South Korea is one of China's largest trading partners for memory chips, silicon wafers, and chip-making materials and parts. In September 2024, South Korea's Trade Minister indicated they would seek additional incentives from the United States in exchange for further tightening advanced semiconductor export controls. Sam Kim, "Embracing China Chip Curbs," *Bloomberg*, September 2, 2024; MacKenzie Hawkins and Sam Kim, "US Asks South Korea to Toughen Export Curbs on China Chips," *Bloomberg*, April 3, 2024.

†China comprises a large and growing share of revenue for major Japanese semiconductor manufacturing equipment companies. Anniek Bao, "Japanese Chip Equipment Firms Count on China Sales Amid U.S. Moves to Block High-End Exports to Beijing," *CNN*, September 6, 2024.

added to the Entity List and targeted with the FDPR, Huawei has doubled down on developing access to domestic alternatives for advanced chips. Huawei has benefitted from direct subsidies and preferential contracts with the Chinese government.[171] These subsidies, along with Huawei's still flourishing telecommunications business, gave it the financial resources to weather the initial drop in revenue from lost smartphone sales and continue investing in R&D.[172] In 2022, Huawei filed patents for proprietary ultraviolet technology, indicating that it was trying to reduce reliance on imported ASML equipment.[173] At the same time, China has focused on increasing production capacity for legacy chips, which provide much of the computing power needed to modernize China's military and are critical for a wide range of supply chains.[174]

Examination of Chinese domestic chip manufacturers and smartphone makers indicates that China's efforts to reduce its reliance on imported semiconductors and chip manufacturing equipment have been slowed by export controls. Although Huawei's smartphone business showed signs of recovery four years after the Department of Commerce tightened export controls, it is clear that China's technology still lags behind the leading global chip producers.[175] In 2023, Huawei released a new smartphone powered by high-end Chinese-made chips,* but these chips trailed the world's most advanced chips in size, energy efficiency, and cost.[176] Huawei's smartphones demonstrated increased self-sufficiency in the percentage of Chinese components in new models released in 2024, but the pace of advancement in semiconductor technology appeared to slow.[177] Huawei reportedly will soon release a new AI chip to replace U.S. chips blocked from export to China by export controls.[178] Equipment stockpiles helped but likely did not solve constraints in fabrication capacity, and China remains dependent on foreign lithography equipment.[179]

Coordination between the United States and Europe has played a key role in the effectiveness of export controls on Russia.[180] Export controls and sanctions have been used in concert to increase their effectiveness in safeguarding national security, particularly when export controls alone are not enough to deter aggressive action by an adversary. In late 2021 and early 2022, the G7 sought to use the threat of sanctions and export controls to deter Russia from attacking Ukraine.[181] While this effort was ultimately unsuccessful, the imposition of export controls after Putin's invasion of Ukraine, coupled with sanctions that limited the country's access to financial resources, have degraded Russia's military industrial base by forcing it to pivot away from Western technology.[182] After the G7 imposed export controls on Russia, Russia shifted to China and other countries, such as Turkey and Iran, to procure replacement goods.[183]

However, Chinese firms are playing a role in helping Russia evade export controls and procure controlled inputs for weapons systems used against Ukraine. A battlefield report on export controls found that of 2,800 different non-Russian components that experts recovered from Russian weapons in Ukraine, almost all of the compo-

*The chips were manufactured by China's leading semiconductor equipment manufacturer, Semiconductor Manufacturing International Corporation (SMIC). Gregory C. Allen, "In Chip Race, China Gives Huawei the Steering Wheel: Huawei's New Smartphone and the Future of Semiconductor Export Controls," *Center for Strategic and International Studies*, October 6, 2023.

nents—95 percent—originated from Western firms.[184] To address the flow of dual-use goods from these countries to Russia, in December 2023 the Administration issued an EO authorizing sanctions against third country banks that facilitate the sale of dual-use goods to Russia.[185] At the same time, continued transshipment from China and Hong Kong in particular has eroded these export controls and allowed controlled materials to end up on the battlefield. (For more on China's support for Russia's war effort, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review)." For more on Hong Kong's role in export control evasion, see Chapter 10, "Hong Kong.") Russia has also been attempting to grow its domestic production capacity for military and dual-use goods, often with Chinese technical support.[186]

Investment Screening

Like trade, investment flows between the United States and China have become inextricably linked with national security concerns. Cross-border investment can be broken into two categories: direct investment and portfolio investment. Portfolio investment covers transactions involving equity or debt securities of an enterprise but typically does not translate into direct management oversight or input into the business beyond shareholder voting rights. In contrast, direct investment typically involves transactions that provide ownership of 10 percent or more, establishing a lasting interest in and a significant degree of influence over an enterprise.

Chinese investment into the United States has the potential to be a conduit for technology transfer and can provide China with leverage over key sectors of the U.S. economy.[187] Yet from the other direction, U.S. investment into China can provide needed funding and transfer intangible benefits—such as managerial expertise and broader awareness and sophistication about technology markets and business models—to advanced technology companies, which in turn have the potential to enhance Chinese military capabilities.[188] To ensure that cross-border investments do not imperil national security, the United States has expanded its inbound investment screening regime to further scrutinize Chinese direct investment into the United States. It is now also pursuing the creation of an outbound investment screening regime that may look at both direct and portfolio investment.

Inbound Investment Screening

Chinese inbound direct investment in the United States has declined substantially since 2017.* U.S. Bureau of Economic Analysis (BEA) data show that new Chinese foreign direct investment (FDI) peaked in 2016 at $27.4 billion before plummeting 97.7 percent to $621 million in 2023.†[189] As of 2023, Chinese entities held $62.4

*Unless otherwise noted, assume any data on investment stock or flows involving China include investment originating from or directed to Hong Kong and Macau.

†This trend matches alternative data sources such as those compiled by Rhodium Group, an independent research provider, though they capture a higher overall value for investment and find that annual investment has dropped from $46 billion in 2016 to less than $5 billion in 2022. The discrepancy in values between the BEA and Rhodium Group data is partially the result of official data being distorted by companies' usage of holding companies, offshore vehicles, and other complex ownership structures to take advantage of favorable tax policies. Complicated deal structures with "indirect" holdings also make it difficult for statistical agencies to correctly separate

billion of FDI stock in the United States.[190] Policy changes in both the United States and China contributed to the fall. Starting in 2016 and continuing through 2017, China directed its domestic investors to reduce certain foreign holdings and tightened the country's capital controls.[191] In 2018, the United States passed the Foreign Investment Risk Review Modernization Act (FIRRMA), which expanded the jurisdiction of the Committee on Foreign Investment in the United States (CFIUS) to block sensitive investments, most notably from China.[192]

CFIUS is an interagency committee chaired by the U.S. secretary of the treasury that reviews certain FDI transactions in the U.S. economy to ensure they do not impair U.S. national security.* FIRRMA strengthened and modernized CFIUS's capacity to take a more assertive role in scrutinizing U.S. inbound investment by broadening the scope of transactions CFIUS can or must review, shifting the filing requirement from voluntary to mandatory in certain more sensitive transactions, expanding the range of national security issues to be considered, and providing more staff and funding to the organization.[193] While the new scrutiny enabled by FIRRMA likely contributed to a drop in Chinese direct investment into the United States, it has not changed the United States' role as the largest global recipient of FDI.[194] From 2013 to 2017, prior to FIRRMA's passage, the United States accounted for 17.4 percent of global FDI inflows.[195] From 2018 to 2023, the United States' share rose to 19.1 percent of global inflows.[196]

FIRRMA helped trigger a global expansion of inbound investment review regimes, restricting Chinese access to key technologies across a range of different economies. The act directed the U.S. Department of the Treasury to "facilitate the harmonization of action" on inbound investments by conferring favored status within CFIUS on countries with their own reliable screening mechanisms.[197] In part because of this, at least 37 countries now have regulatory frameworks for screening investments on national security grounds, including most EU members, the UK, and Japan.[198]

Outbound Investment Screening

While negotiating FIRRMA, policymakers debated the merits of restricting or screening U.S. outbound investments to China.[199] Proponents hoped to address many of the same concerns that drive existing restrictions, such as export controls—namely to prevent U.S. resources from helping an adversary country advance technologically. Critics feared new restrictions would undermine the United States' position as the preeminent global capital market.[200] Ultimately, a proposed outbound investment program was excluded from FIRRMA.[201] Since FIRRMA's enactment, policymakers have

FDI from portfolio investment stakes in the surveys they use to collect their data. Alternative data providers like Rhodium Group attempt to rectify this by taking a transactional approach that tracks and captures individual transactions. Thilo Hanemann, Armand Meyer, and Danielle Goh, "Vanishing Act: The Shrinking Footprint of Chinese Companies in the US," *Rhodium Group*, September 7, 2023; Thilo Hanemann et al., "Two-Way Street: 2021 Update US-China Investment Trends," *US-China Investment Project*, May 2021, 36.

*CFIUS jurisdiction includes mergers, acquisitions, and takeovers that could result in foreign control of a U.S. business; certain non-controlling investments in businesses involved in critical technologies, critical infrastructure, or sensitive personal data (so-called "TID U.S. businesses"); and certain real estate transactions. U.S. Department of the Treasury, *CFIUS Frequently Asked Questions.*

returned to outbound investment issues, in part in response to continued concerns over U.S. investment into China.[202]

The Scale of U.S. Outbound Investments into China

Inadequate official U.S. government data collection and publication obscures the scale and sectoral allocation of U.S. investments into China. Publicly accessible official U.S. government data do not show U.S. investor positions based on the ultimate destination of their direct and portfolio investments; instead, they permit the reporting of trillions of dollars of investment in the Cayman Islands or other Caribbean islands. The data that is accessible is categorized too broadly to discern the technologies or industries that U.S. investment benefits. Private data providers can address some of these issues, but drawbacks in their collection methods mean they still present an imperfect picture at best. Nevertheless, both official and private data sources suggest that while total U.S. outbound investment flows to China have substantially declined in recent years, direct investment in particular has become increasingly concentrated in innovative sectors with implications for U.S. national security.[203]

Official U.S. Data on U.S. Outbound Investments into China

At the end of 2023, U.S. official data showed the total U.S. direct investment stock in mainland China to be $126.9 billion.[204] Including Hong Kong and Macau, U.S. direct investment rises to $218.5 billion, or 3.3 percent of total U.S. direct investment stock.[205] As of 2022, the most recent year with complete data, accumulated U.S. portfolio investment stock in mainland China was a much more sizable $712 billion.[206] Including Hong Kong and Macau, U.S. portfolio investment stock rises to $910 billion ($860 billion in equity investments and $50 billion in bonds), or 8.5 percent of U.S. foreign investment stock.[207]

In recent years, the growth of U.S. direct investment into China has steadily declined. From 2008 until 2018, U.S. FDI into China increased by an average of $10.4 billion a year. From 2019 to 2023, the growth rate nearly halved, falling to $5.6 billion a year.[208] Since the end of 2020, the value of U.S portfolio stock has been falling, though a significant portion of that likely resulted from a reduction in Chinese company valuations rather than a reduction in volume.*[209] In 2022, the value of U.S. portfolio investment stock fell by $258.7 billion compared with 2021.[210]

Limitations of Official U.S. Data Sources on Outbound Investment

A key challenge that has plagued discussions around a U.S. outbound investment mechanism—and the broader U.S.-China financial relationship—has been a lack of reliable, official data released by the U.S. government. The Bureau of Economic Analysis (BEA) under the Commerce Department and the Treasury Department are the primary government bodies responsible for collecting and pub-

*From December 31, 2021, to December 30, 2022, the CSI 300, the benchmark of mainland-traded stocks, fell 21.6 percent, almost identical to the 22.1 percent decline in the value of U.S. portfolio investments in China. Shanghai Stock Exchange, "*CSI 300* [2021–2023]," via Haver Analytics; Carol C. Bertaut, Beau Bressler, and Stephanie Curcuru, "Globalization and the Geography of Capital Flows," *Board of Governors of the Federal Reserve System FEDS Notes*, December 15, 2023.

lishing data on outbound financial flows.[211] However, restrictions around the collection and public reporting of U.S. outbound investment statistics likely obscure the ultimate scale of these flows and prevent a detailed assessment of U.S. direct and portfolio investment in China.[212]

Table 1: Official Annual Data Collection on U.S. Outbound Investment

Data Type	Collecting Agency	Limitations
Direct Investment	The Department of Commerce Bureau of Economic Analysis (BEA)	Data reflect the place of incorporation of the immediate investment counterpart, which may not be the ultimate destination of the investment.* Data are published with sector categorizations that are too broad to discern the specific industries U.S. investment is supporting.
Portfolio Investment	The Department of Treasury	Data reflect the place of incorporation of the immediate investment counterpart, which may not be the ultimate destination of the investment. Data are published without any sector categorizations.

Source: Various.[213]

U.S. direct investment statistics reflect the place of incorporation of the immediate investment counterpart, which is not necessarily the country that domiciles the ultimate beneficial owner (UBO).†[214] As a result, the $700 billion in reported direct investment stock in offshore tax havens such as Caribbean island non-banking holding companies and financial firms, for example, likely masks considerable additional investment flowing into China.[215] Legal restrictions within the International Investment and Trade in Services Survey Act—which governs how the BEA is able to collect outbound direct investment data—protect the confidentiality of the data that is released.[216]

These privacy restrictions mean the sectoral breakdowns of U.S. official data are also too broad to discern investment shifts into sectors most relevant for national security. It is impossible to figure

*Every five years, through the Benchmark Survey of U.S. Direct Investment Abroad, the BEA collects data on the universe of foreign affiliates of U.S. entities, including detailed balance sheet and ownership information. By combining the data collected in the Benchmark Survey with data from the BEA's Quarterly Survey of U.S. Direct Investment Abroad, BEA researchers have proposed a methodology to reallocate the U.S. direct investment abroad position to the countries and industries where it is ultimately invested. This reallocation suggests substantial U.S. outbound investment flows to the Cayman Islands and other tax havens are eventually routed to China. For example, using data from the 2019 Benchmark Survey, researchers found that in 2019 the U.S. direct investment position in mainland China could be valued at $240 billion, or $140 billion dollars more than what was estimated for that year in official BEA statistics. However, the reallocation methods provide an imperfect and incomplete picture. Additional data would be needed to regularly publish direct investment statistics that attribute investment to the ultimate host economy. Kirsten Brew et al., "Experimental Ultimate Host Economy Statistics for U.S. Direct Investment Abroad," *U.S. Department of Commerce Bureau of Economic Analysis*, October 2023, 7–8, 24.

†Ultimate beneficial ownership (UBO) refers to the person or entity that ultimately owns or controls a company.

out how much U.S. direct investment is flowing into China across areas such as AI, quantum computing, and semiconductors, given that the most detailed U.S. data end at "manufacturing of electrical equipment, appliances, and components," "information," and "professional, scientific, and technical services."[217] The BEA argues this is to prevent its data from being used to discern information about individual transactions, though analysts have challenged this as being overly cautious.[218]

Data on U.S. portfolio investment in China suffer from issues similar to those of direct investment. The Treasury Department's Treasury International Capital (TIC) system does not provide the UBO of outbound portfolio investment transactions.[219] However, other parts of the Federal Government such as the Federal Reserve are able to reconstruct portfolio investment beneficial ownership datasets, though with a severe time lag.[220] Neither the TIC nor any other parts of the Federal Government publish outbound portfolio investment data organized by investment sector.[221]

Alternative Estimates of U.S. Direct Investment into China

Private sector data sources, such as Pitchbook and fDi Markets, can be an imperfect solution to the inadequacies of official direct investment statistics. However, unlike official sources such as the BEA, which impose mandatory reporting requirements, private data collection firms must rely on methods that are inherently incomplete.* Still, Pitchbook, a private data provider, can provide insight into non-greenfield (mergers and acquisitions, private equity, and venture investment) U.S. investment, which captures the lion's share of U.S. direct investment to China.† According to calculations using Pitchbook data by Sarah Baurle Danzman, associate professor at Indiana University Bloomington, new U.S. investment flows in companies headquartered in mainland China, Hong Kong, or Macau peaked in 2018 at just under $190 billion—a figure considerably higher than official statistics.[222] Investment volumes have declined every year since 2021. In 2023, U.S. non-greenfield investment flow to China was 30 percent of its 2021 value, or slightly below $40 billion.[223]

While the absence of detailed, official U.S. data means it is impossible to get a complete picture of U.S. direct investment into China, alternative data providers suggest U.S. investors continue to make meaningful contributions to technology sectors at the heart of U.S.-China strategic competition. The United States remains the primary global investor in these sectors and the deals U.S. firms make can generate national security concerns if U.S. investors provide capital and expertise that help China advance its capabilities in sensitive technologies.[224]

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*Pitchbook, for example, relies on systematic web crawling and is therefore unable to capture investments that have not been reported in regulatory filings, news articles, or press releases. Michael R. Ryan, "Pitchbook Database," *Texas Tech University Innovation Hub at Research Park*.

†Calculations by Sarah Bauerle Danzman suggest the overwhelming majority of U.S. direct investment flows to China fall under these categories. Dr. Danzman finds U.S. investment through mergers and acquisitions, private equity, and venture capital was about three times as large as global greenfield foreign direct investment to China in 2022, with VC investment making up the largest portion. Sarah Bauerle Danzman, statement for the record for U.S.-China Economic and Security Review Commission, *Hearing on Key Economic Strategies for Leveling the U.S.-China Playing Field: Trade, Investment, and Technology*, May 23, 2024, 2.

U.S. non-greenfield investment in strategic sectors such as semiconductors, quantum computing, and AI is a fraction of U.S. total investment to China and is almost exclusively undertaken by venture capital (VC) firms.*[225] U.S. investment flows in semiconductors, quantum computing, and AI peaked in 2020 at nearly $17 billion before plummeting to around $2 billion in 2023, though as discussed below they grew in 2024.[226] Among those sectors, U.S. investment is heavily concentrated in the semiconductor industry, which accounted for over 90 percent of total U.S. investment in China's semiconductors, quantum computing, and AI sectors in 2020.[227] U.S. investors have also been historically very involved with the Chinese AI industry. An analysis by the Center for Security and Emerging Technology (CSET) found that from 2015 to 2021, U.S. investors accounted for 37 percent of the $110 billion in global funding raised by Chinese AI firms.†[228]

The United States is the most important foreign source of investment to semiconductors, quantum computing, and AI in China.[229] U.S. investors consistently contribute more than double the capital to these sectors compared with all non-U.S. investors combined. Despite increased government interest in an outbound investment regime, U.S. investors remain keenly interested in supporting and investing in China's semiconductors, quantum computing, and AI sectors.[230] In the first half of 2024, U.S. direct investment in those sectors had already surpassed the total value of 2023.[231]

Private sector data sources do not provide estimates of the total allocation of U.S. portfolio investments in China by sector.[232]

Impact of Restricting U.S. Direct and Portfolio Investment

Restricting U.S. direct or portfolio investment would have different impacts on China's innovation ecosystem. Halting the flow of direct investment to specific sectors within the Chinese economy would diminish certain companies' access to funding and the intangible benefits often associated with venture capital firms and early-stage investors.[233]

Direct investment often involves a long-term relationship that gives control over or a significant degree of influence on the management of an enterprise. Historically, China has enforced stringent restrictions on direct investment flows into the country and has forced U.S. and other foreign businesses to acquiesce to joint ventures with Chinese firms and sign over their IP and technology to access the Chinese market.[234] Because of the strategic nature of the investment, in addition to providing capital or technology, U.S. investors often also provide intangible benefits to recipient companies, including an enhanced global reputation, managerial expertise, talent networks, a deep understanding of technology, and U.S. market access.[235]

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*In calculating investment size, Dr. Danzman specifically defines these sectors to include semiconductors, edge computing semiconductors, generative AI, post-quantum cryptography, quantum computing, quantum sensing, and swarm AI.

†CSET researchers used Crunchbase as their data source instead of Pitchbook, which is the source of the other non-greenfield investment statistics referenced earlier. Without an official source, and because private sector sources have to rely on inherently incomplete collection methods such as web scraping, there may be some minor divergences in the data provided by both sources.

Intangible benefits can be especially meaningful for companies in the startup or early growth phase. When working with founders who are often young and inexperienced, intangible benefits such as how to manage complex supply chains, maintain a skilled workforce, and develop commercial strategies can be critical in determining the success or failure of young technology companies.[236]

The scale of U.S. passive investments into China has also generated national security concerns. The relative ease at which transactions can happen mean the value of U.S. portfolio investment stock in China was far larger than the value of U.S. direct investment stock.*[237] Such massive differences in magnitude can help offset the lack of intangible benefits offered.[238] Abundant U.S. equity investments in Chinese markets can help Chinese companies by reducing their costs of capital, allowing them to acquire other businesses with company stock, and attracting and compensating top talent with company stock and stock options.[239]

As of 2022, U.S. portfolio holdings of equity made up 5.3 percent of China's domestic market capitalization.† United States firms are likely the largest foreign holder of Chinese equities.‡[240] Therefore, while nothing blocks other foreign capital from backfilling any lost U.S. equity investments, the relative scarcity of global capital, combined with the weak performance of Chinese equity markets in recent years, may mean there are insufficient alternative sources to fully make up for U.S. portfolio investments. The United States is by far the largest global investor, making up 25.5 percent of total foreign portfolio investments as of December 2023.[241] Including the United States' G7 allies, which are also considering an outbound investment screening mechanism, this share jumps to 72.2 percent of global foreign equity investments (as of December 2023, the G7 makes up 48 percent of foreign holdings in the Chinese equity market and 59.3 percent of the Hong Kong equity market).§[242] This sig-

*In 2022, the official value of U.S. portfolio investment stock was 435 percent of direct investment ($910 billion in portfolio investment stock and $209 billion in direct investment stock). However, limitations in official data collection of U.S. direct investment likely mean the true percentage could be different. Carol C. Bertaut, Beau Bressler, and Stephanie Curcuru, "Globalization and the Geography of Capital Flows," *Board of Governors of the Federal Reserve System FEDS Notes*, December 15, 2023; U.S. Department of Commerce, "Direct Investment by Country and Industry, 2022— *U.S. Direct Investment Position Abroad on a Historical-Cost Basis, By Country and Industry* [2022]," July 20, 2023.

†This calculation was done by dividing the Federal Reserve's estimate for U.S. holdings of Chinese and Hong Kong securities by their respective stock market capitalization (China at $11.47 trillion and Hong Kong at $4.57 trillion). World Bank Group, "Market Capitalization of Listed Domestic Companies (Current US$) - China, Hong Kong SAR, China"; Carol C. Bertaut, Beau Bressler, and Stephanie Curcuru, "Globalization and the Geography of Capital Flows," *Board of Governors of the Federal Reserve System FEDS Notes*, December 15, 2023.

‡Based on the Coordinated Portfolio Investment Survey (CPIS), a voluntary data collection exercise conducted under the auspices of the International Monetary Fund (IMF), the United States is the largest foreign holder of Chinese and Hong Kong equities with nearly double the assets of the next-largest foreign holder, Singapore. Importantly, however, the CPIS dataset is reliant on national sources to build these data. As a result, the IMF reports 2022 U.S. equity holdings in China and Hong Kong as $367 billion, which is derived from Treasury Department data on residency. This is far lower than the Fed's nationality-adjusted value of $860 billion. While this adjustment could mean U.S. investors are by far the largest and most important foreign investor in Chinese equities, contributing four times as much capital as Singapore, the prevalence of tax havens and the imprecision of investment data likely indicate that other countries' total assets are underreported as well. International Monetary Fund, "Coordinated Portfolio Investment Survey–*Derived Portfolio Investment Liabilities (All Economies) by Economy of Nonresident Holder: Total Portfolio Investment (Derived from Creditor Data)*," June 2023.

§Note that CPIS includes mainland China as a foreign investor of the Hong Kong equity market and Hong Kong as a foreign investor of the mainland China equity market. The calculations exclude China and Hong Kong, respectively, as a foreign investor.

nificant share of assets means that if the G7 eventually implements outbound investment restrictions on portfolio investment across all its member economies, it could significantly impact Chinese public companies' access to capital and reduce their ability to compensate talent or conduct mergers and acquisitions.[243]

Ongoing Efforts to Regulate Outbound Investment Screening

Ongoing U.S. investment into China raises concerns that remain unaddressed by existing U.S. authorities. CFIUS screens many types of investments into the United States for national security risks, but not outbound flows. Export controls can mitigate the risk from the transfer of sensitive U.S. technologies and prohibit such transfers as part of an investment or via R&D collaboration, but they do not cover other risks that arise from capital investments, particularly VC/FDI. Policymakers have been engaged in an active debate about whether to create an outbound investment screening mechanism, how broad to scope it both in terms of the sectors and the types of investment to be covered, and otherwise how best to structure such a system to achieve the desired policy goals but not interfere with status of the United States as the premier global financial center. In August 2023, the White House issued an EO directing the Treasury Department to create an outbound investment review regime, and debates in Congress continue.*

Implications for the United States

Economic statecraft has become the United States' tool of first resort in addressing the threats China poses to key U.S. interests. Policymakers in Washington have turned to trade measures, export controls and sanctions, and foreign investment reviews to address longstanding concerns about Chinese non-market practices, forced technology transfer, civil-military fusion, Chinese technological and military modernization, and the specter of military confrontation. Some of these tools have not been used at scale in a generation. As a result, the use of each needs to be reviewed regularly to ensure each is addressing the unique challenges posed by the Chinese economy and its system at large.

How the United States coordinates and communicates its trade policy will play a central role in effectively wielding trade instruments to promote resilient and fair economic relations with China. Since 2017, the United States has more aggressively utilized a broader range of trade authorities. However, these tariffs and other trade tools—as blunt yet powerful instruments—have led to wide-ranging effects on the U.S. economy, promoting trade and supply chain objectives in some areas while imposing costs in others. The effectiveness of these trade policies can be enhanced through better calibration of the policy mix. China's surging manufacturing capacity and exports in 2024 and its efforts to develop national champions in key technology areas further underlie the need for a dynamic and strategic approach to counter China's unfair trade practices. Above all, a comprehensive and coherent trade policy must start by addressing

*For additional background on the EO, refer to Appendix II, "Executive Order on an Outbound Investment Security Program."

unresolved questions about U.S. goals and articulating a vision of the desired future U.S.-China economic relationship.

The United States has led a number of key allies to introduce export controls on strategic technologies, most notably semiconductors and semiconductor manufacturing equipment. Through an iterative and collaborative process, the United States has demonstrated both the national security necessity for export controls and that export controls can effectively slow the technological advancement of adversarial nations. The United States should continue to anticipate rapid development in these areas, requiring constant recalibration and coordination with allies and partners on what constitutes a cutting-edge technology. Simultaneously, the United States should not lose sight of legacy chips. Chinese dominance of legacy chip production could create new risks for U.S. commercial supply chains and military procurement. (For more on U.S.-China technology competition, see Chapter 3, "U.S.-China Competition in Emerging Technologies.")

Debate continues around the desirability of an outbound investment mechanism and how it should be designed and implemented. Broad bipartisan consensus calls for a new tool to stem the flow of capital and nontangible know-how from the United States' preeminent firms into advanced Chinese technology companies. The August 2023 outbound investment EO is a starting point. However, a durable mechanism will likely need to be founded in legislation. A number of debates around its scope also remain, including the types of investments that should be prohibited. A further challenge in shaping the mechanism is the lack of data around U.S. investments into China. The pervasive use of offshore tax havens and an inability to access granular, sectoral data mean policymakers are flying blind when determining the scale and scope of investment prohibitions.

However, the size and salience of China mean that no single U.S. economic statecraft tool will be a panacea for the challenges its economy poses. Trade measures, export controls and sanctions, and investment restrictions will need to work in tandem to achieve the United States' most ambitious and important goals. This means that the policy work cannot end when each tool is adopted and streamlined to address the issues in its specific domain. U.S officials must continuously dismantle bureaucratic siloes and compel implementing agencies to work toward a unified strategy.

Appendix I: Current Multilateral Export Control Regimes

Regime:	**Nuclear Suppliers Group**	**Australia Group**	**Missile Technology Control Regime**	**Wassenaar Arrangement**
Founded in:	*1974*	*1985*	*1987*	*1996*
Covered Technologies:	Nuclear and nuclear-related materials, software, and technology	Equipment, materials, technology, and software that could contribute to chemical and biological weapons activities	Unmanned aerial vehicles capable of delivering weapons of mass destruction	Conventional arms and dual-use items and technologies
Argentina	×	×	×	×
Australia	×	×	×	×
Austria	×	×	×	×
Belarus	×			
Belgium	×	×	×	×
Brazil	×		×	
Bulgaria	×	×	×	×
Canada	×	×	×	×
China	×			
Croatia	×	×		×
Cyprus	×	×		
Czech Republic	×	×	×	×
Denmark	×	×	×	×
Estonia	×	×		×
European Union		×		
Finland	×	×	×	×
France	×	×	×	×
Germany	×	×	×	×
Greece	×	×	×	×
Hungary	×	×	×	×
Iceland	×	×	×	
India		×	×	×

Regime: *Founded in:* Covered Technologies:	**Nuclear Suppliers Group** *1974* Nuclear and nuclear-related materials, software, and technology	**Australia Group** *1985* Equipment, materials, technology, and software that could contribute to chemical and biological weapons activities	**Missile Technology Control Regime** *1987* Unmanned aerial vehicles capable of delivering weapons of mass destruction	**Wassenaar Arrangement** *1996* Conventional arms and dual-use items and technologies
Ireland	×	×	×	×
Italy	×	×	×	×
Japan	×	×	×	×
Kazakhstan	×			
Latvia	×	×		×
Lithuania	×	×		×
Luxembourg	×	×	×	×
Malta	×	×		×
Mexico	×	×		×
Netherlands	×	×	×	×
New Zealand	×	×	×	×
Norway	×	×	×	×
Poland	×	×	×	×
Portugal	×	×	×	×
Republic of Korea	×	×	×	×
Romania	×	×		×
Russia	×		×	×
Serbia	×			
Slovakia	×	×		×
Slovenia	×	×		×
South Africa	×		×	×
Spain	×	×	×	×
Sweden	×	×	×	×
Switzerland	×	×	×	×

Regime:	**Nuclear Suppliers Group**	**Australia Group**	**Missile Technology Control Regime**	**Wassenaar Arrangement**
Founded in:	*1974*	*1985*	*1987*	*1996*
Covered Technologies:	Nuclear and nuclear-related materials, software, and technology	Equipment, materials, technology, and software that could contribute to chemical and biological weapons activities	Unmanned aerial vehicles capable of delivering weapons of mass destruction	Conventional arms and dual-use items and technologies
Turkey	×	×	×	×
Ukraine	×	×	×	×
United Kingdom	×	×	×	×
United States	×	×	×	×

Source: Various.[244]

Appendix II: Executive Order on an Outbound Investment Security Program

On August 9, 2023, in response to worsening relations and the continued flow of U.S. investment into key Chinese technology sectors, the White House issued an EO, "Addressing United States Investments in Certain National Security Technologies and Products in Countries of Concern," establishing an outbound investment regime.[245] The EO takes a sectoral approach focusing on U.S. investments in China across a narrow set of technologies related to semiconductors and microelectronics, quantum information technologies, and AI systems.[246] The EO is rooted in the authority granted to the president by the International Emergency Economic Powers Act (IEEPA).*[247]

Shortly after the EO was released, the Treasury Department issued an Advance Notice of Proposed Rulemaking (ANPRM) that outlined the proposed outbound investment regime and sought public comments.[248] In July 2024, the ANPRM was followed up with a Notice of Proposed Rulemaking (NPRM), which detailed the Administration's current thinking on how to design and implement an outbound investment mechanism.†[249]

The program aims to limit investment by U.S. persons‡ in Chinese entities that are involved in—or in certain circumstances may become involved in—the development or production of covered technologies.§ It would do this by proposing two categories of concern for outbound direct investments: notifiable transactions that could contribute to a national security threat and prohibited transactions

*IEEPA grants the president sweeping authority to "nullify, void, prevent, or prohibit" transactions, 50 U.S.C. §1702(a)(1)(B), in response to "any unusual and extraordinary threat… to the national security, foreign policy, or economy of the United States," 50 U.S.C. §1701(a).

†While the ANPRM and the NPRM are very similar they do have a few important differences. The definition of AI was harmonized to align with other EOs such as EO 14110. The NPRM elaborates on and refines some ambiguities around the knowledge standard (which describes the knowledge a U.S. person must have about certain facts and circumstances related to a transaction to trigger obligations under the proposed rule); clarifies applicability in very specific transactions types; provides a new exception for transactions involving persons of third countries that have similar measures aimed at outbound investments; and clarifies the scope of limited partner investments that would be covered by the proposed rule and those that would be excepted. U.S. Department of the Treasury, Office of Investment Security, *FACT SHEET: Treasury Department Issues Notice of Proposed Rulemaking on Implementation of Outbound Investment Executive Order (E.O. 14105)*, June 21, 2024.

‡The EO and NPRM impose compliance obligations on "U.S. persons," defined as a U.S. citizen or lawful permanent resident, as well as any entity organized under the United States or any jurisdiction within the United States, including those entities' foreign subsidiaries. Notably, the non-U.S. entity also falls under the jurisdiction of the mechanism if it has a majority owner, general partner, or investment adviser to a pooled investment fund that falls under the definition of a U.S. person. Similar to economic sanctions, the rules would also prohibit a U.S. person from making or substantially participating in transactions on behalf of a non-U.S. person that would be prohibited if undertaken by a U.S. person. U.S. Department of the Treasury, "Provisions Pertaining to U.S. Investments in Certain National Security Technologies and Products in Countries of Concern," *Federal Register* 89:129 (July 5, 2024); Antonia I. Tzinova et al., "Treasury Department Issues Long-Awaited Proposed Rule on Outbound Investment Screening," *Holland & Knight*, June 26, 2024; U.S. Department of the Treasury, "Provisions Pertaining to U.S. Investments in Certain National Security Technologies and Products in Countries of Concern," *Federal Register* 89:129 (July 5, 2024).

§The NPRM defines this as "covered transactions," which happen when a "U.S. person" transacts with a "covered foreign person." A "covered foreign person" is defined as a "person of a country of concern" that engages in activity related to the technologies specified as notifiable or prohibited in the proposed regulations. "Person of a country of concern" covers any entity headquartered in, with a principal place of business in, or organized in the People's Republic of China, Hong Kong, and Macau (China); an individual who is a citizen or permanent resident of China; or an entity that is directly or indirectly majority-owned by a Chinese person. U.S. Department of the Treasury, "Provisions Pertaining to U.S. Investments in Certain National Security Technologies and Products in Countries of Concern," *Federal Register* 89:129 (July 5, 2024).

that "pose a particularly acute national security threat" because of their potential to significantly advance the "military, intelligence, surveillance, or cyber-enabled capabilities" of countries of concern.[250] However, any notifiable transaction would be automatically prohibited if the Chinese entity party to the transaction is listed on any one of several U.S. government lists primarily used for export controls and sanctions, including the Entity List and the Specially Designated Nationals (SDN) list.[251]

Unlike CFIUS, the outbound investment program would not operate through a case-by-case review or preapproval requirement. Violations would be retroactively enforced though civil and criminal penalties.[252] While the Administration's approach to prohibited transactions is consistent with its "small yard, high fence" strategy, the regime's notification requirements are far broader and are intended to fill in critical gaps regarding the United States' understanding of the nature and scale of domestic investments in Chinese high-tech sectors. (For more, see "Limitations of Official U.S. Data Sources on Outbound Investment" in this chapter.)[253]

Table 2: NPRM Proposed Approach to Notifiable and Prohibited Transactions

Technology	Notifiable Transaction	Prohibited Transaction
Semiconductors and microelectronics	The design, fabrication, and packaging of any integrated circuit that is not covered by the definition of prohibited transactions.	Developing or producing advanced integrated circuit design and equipment software; developing or producing specific front-end semiconductor fabrication, advanced packaging, or extreme ultraviolet lithography equipment; designing, fabricating, or packaging integrated circuits that meet or exceed advanced technical thresholds; developing, installing, selling, or producing any supercomputer.
AI systems	Designed to be used by government intelligence or military; cybersecurity applications, digital forensics tools, penetration testing tools, or the control of robotics systems; trained using a quantity of computing power greater than an amount yet to be determined; specialized AI models trained on high-quality data.	AI systems designed to be exclusively used for military, government intelligence, or mass surveillance; frontier AI models; AI systems trained using a certain quantity of computing power; and AI systems trained with biological sequence data.
Quantum information technologies	None	Developing a quantum computer or producing any of its critical components; developing or producing any quantum sensing platform designed for government, intelligence, or mass surveillance purposes; developing or producing certain quantum networks or quantum communication systems.

Source: U.S. Department of the Treasury, "Provisions Pertaining to U.S. Investments in Certain National Security Technologies and Products in Countries of Concern," *Federal Register* 89:129 (July 5, 2024).

The Administration's program specifically covers active investments, sometimes called "smart money," including the acquisition of equity interests (mergers and acquisitions, private equity, and VC), contingent equity interests, greenfield investments, joint ventures, and equity-convertible debt financing.[254] It notably carves out passive investments such as publicly traded securities; securities issued by an investment company, like an index fund, mutual fund, or exchange traded fund; and pooled investment funds.*[255]

*Treasury is still finalizing its approach to investments in pooled funds and has proposed two approaches. The first exempts them so long as the U.S. investor's rights are consistent with a passive investment and their capital is not more than 50 percent of the total assets under management. The second caps their investment at $1 million. Janet K. Kim, Sylwia A. Lis, and Rob O'Brien, "US Treasury Department Issues Proposed Rules Restricting US Outbound Investment in Advanced Technologies Involving China," *Baker McKenzie*, June 25, 2024.

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CHAPTER 7: CHINA'S NEW MEASURES FOR CONTROL, MOBILIZATION, AND RESILIENCE

Abstract

After a long period of "peace and development" during which Chinese Communist Party (CCP) leaders felt the international environment was conducive to China's economic development, growing power, and international influence, the views of China's leadership have changed. General Secretary of the CCP Xi Jinping now believes China has entered a period of increased challenges both domestically and internationally and has taken a number of steps to better prepare the Party and country for this period of threat and uncertainty. On the political front, Chinese leaders have broadened conceptions of national security to enhance the Party-state's power, build out the national security state, and expand tools of societal control at the grassroots level. On the military front, China's armed forces have improved their mechanisms for mobilizing available manpower, leveraging resources in the civilian economy, and priming the Chinese public to contribute to national defense. On the economic front, China has implemented measures to strengthen food security, energy security, and trade and financial security.

China's numerous and varied actions are driven by multiple goals, including the desire to suppress domestic challenges, prepare for a more volatile and less open international economic environment, and position itself effectively for long-term strategic competition with the United States. At the same time, many of these actions serve to increase China's capacity for rapid military mobilization and resilience in the case of hostilities. Recent changes have made China significantly more prepared for war compared to five years ago while potentially obscuring the signals that would normally precede an imminent or near-term mobilization. These changes have already altered the strategic and operational environment in China's favor. Chinese officials likely believe they have moderated the economic costs the United States and its allies could impose on them through sanctions, blockades, and trade restrictions in the event there is an outbreak of hostilities, potentially reducing the deterrent effect of non-military policy options and external constraints.

Key Findings

- China's leaders believe they have entered a new historical phase characterized by greater internal and external threats. This heightened threat perception has fueled numerous policy efforts to better prepare the Party, China's society, and the military for what the Party believes will be a more hostile and uncertain period.

- China's leaders have intensified their rhetoric about risk over the last few years, increasingly invoking a concept called "extreme scenario thinking" that suggests Chinese policymakers are increasingly thinking through the potential ramifications of a wide range of scenarios, including the repercussions of actions they might initiate on the international stage. At the same time, CCP rhetoric toward Taiwan and the United States has not escalated to the degree that preceded China's conflicts in past decades or to what some experts expect to see if China were imminently preparing for war.
- China is continuing longstanding efforts to address concerns over food insecurity. China is largely self-sufficient in four of five key staples, though it is becoming increasingly dependent on corn and wheat imports. China relies on imports for the fifth (soybeans) and is overall a significant net food importer. China is believed to have the world's largest stockpiles of its key staples and has taken measures to diversify its soybean supplies away from the United States and reduce overall soybean consumption.
- China is taking measures to enhance its energy security and to ensure it can address its oil energy needs for long periods of time without imports. China is largely self-sufficient in coal, its primary energy source for power generation, and it has developed a coal surge capacity to deal with temporary disruptions. Perhaps because natural gas is not a major part of China's energy mix, China seems less concerned about its significant reliance on imports and only has a short-term stockpile of natural gas. China is heavily dependent on oil imports for transportation and appears to be building very large stockpiles—with estimates of one to two years' supply.
- China is taking measures to enhance its financial security, challenge global dollar dominance, and protect itself from U.S. financial sanctions by creating alternatives to dollar-based trade and the U.S.-controlled financial payments system. These efforts have accelerated since the imposition of sanctions in the wake of Russia's war of aggression against Ukraine. While the renminbi (RMB) is not on pace to supplant the U.S. dollar as a medium of global exchange, China is developing these tools with the intention to insulate itself from many types of U.S. financial sanctions.
- Party leaders have developed an exceedingly broad conception of national security and expanded their tools for domestic control. These include an increasingly robust internal security apparatus, the revival of some Maoist-era methods of mass mobilization, and efforts to leverage the public for surveillance and control, including by outsourcing public security tasks to government-sanctioned "vigilante groups." This heightened focus on security has been formalized through an expansion of relevant legal infrastructure, with new laws defining national security as touching upon virtually every aspect of society.

- There is currently no evidence that China is preparing for an imminent war, but the various reforms China has made to its defense mobilization system over time undeniably make it more confident and prepared for hostilities than it was five years ago. Many of these measures reduce the time needed for China to mobilize and transition from peacetime or gray zone activities to active hostilities and could be read as efforts to prepare the operational environment for a conflict over Taiwan. Given the decreasing amount of open source data available about China, the United States and international observers will have less visibility of warnings and indicators that may presage Chinese military action, a shorter timeline to react once indicators are discovered, and fewer non-military tools to respond.

Recommendations

The Commission recommends:

- Congress direct the Office of the Director of National Intelligence, within 180 days, to conduct a classified assessment, and brief its findings to Congress, of the intelligence community's (IC) ability to accurately monitor strategic, nonmilitary indicators that would signal that China is preparing for imminent conflict and the extent to which China's increasing lack of transparency affects the IC's ability to monitor this information. The assessment should include, but not be limited to, the following:
  - The IC's ability to monitor:
    - China's energy storage locations and stockpiling rates, particularly for crude oil, coal, and natural gas;
    - Production shifts from civilian to military industries;
    - China's national defense mobilization system; and
    - China's strategic reserves and their compositions and locations;
  - The IC's ability to coordinate with non-Title 10 and -Title 50 federal agencies that have technical expertise in agriculture and trade to monitor China's food and energy stockpiling and any derived indicators that may signal a potential preparation for conflict;
  - Whether the IC's current geospatial intelligence posture is adequate to compensate for the loss of open source information from China; and
  - The desirability and feasibility of establishing an Energy Strategic Warning system involving coordination between relevant entities including the National Geospatial-Intelligence Agency and the U.S. Departments of Energy, Commerce, State, and the Treasury.

Introduction

In 2022, protestors in China chanted "Xi Jinping, step down!" and "Communist Party, step down!" as the most significant public expressions of discontent in decades spread from Shanghai to cities across

China.[1] Though quickly repressed, such daring chants and protests suggest that the CCP, despite its relentless efforts, has not been able to entirely suppress dissent toward the Party-state. Likewise, China has exhausted the patience of major economies and trading partners who are no longer willing to endure its economic predation or ignore its aggression and security threats. Thus, China faces a new era of risks that the Party's own policies have brought about.

This chapter examines some of China's key responses to its perceptions of intensifying domestic and international risks. It will first investigate China's efforts to improve economic resilience in its food, energy, and financial infrastructure. It will then examine recent changes in Chinese leaders' assessment of their environment and survey the Party-state's efforts to enhance political control over China's institutions and society. Finally, it will assess recent efforts to improve the capacity of China's armed forces and society to rapidly mobilize for a conflict, before considering implications for the United States. This chapter is based on the Commission's June 2024 hearing on "China's Stockpiling and Mobilization Measures for Competition and Conflict," consultations with experts, and open source research and analysis.

Chinese Leaders Worry about Interlocked Internal and External Risks

In the past several years, China's leadership has assessed that they have entered a period of greater security challenges and internal and external risks. General Secretary Xi's speech and accompanying report to the 20th Party Congress in October 2022 struck a darker tone than the previous one in 2017, emphasizing rising threats and calling on the nation to "be ready to withstand high winds, choppy waters, and even dangerous storms."[2] Customary language about China's "period of strategic opportunity" and "peace and development" as "the theme of the times" was dropped from the political report, which instead stated that strategic opportunities were now concurrent with risks and challenges.*[3] In a speech to the Central National Security Commission in May 2023, Xi continued this intensified rhetoric, describing the national security environment as "complex and severe."[4]

The language in senior leadership's speeches has also become increasingly confrontational. In a speech to representatives from the commercial sector during the annual "two sessions" in March 2023, Xi plainly stated that "Western countries—led by the United States—have implemented all-round containment, encirclement and suppression against us, bringing unprecedentedly severe challenges to our country's development."†[5] Xi has also increasingly exhorted

*The concept of the period of strategic opportunity was introduced by Jiang Zemin at the 16th Party Congress in 2002, characterizing the first two decades of the 21st century as presenting a peaceful external environment and stable domestic situation that would allow China to concentrate on economic growth and development, building on Deng Xiaoping's statement that "peace and development are the theme of the times." Center for Strategic Translation, "Peace and Development are the Theme of the Times;" Center for Strategic Translation, "Period of Strategic Opportunity."

†The speech was given to delegates of the Chinese People's Political Consultative Conference (CPPCC), an advisory body, from the All-China Federation of Industry and Commerce and the China National Democratic Construction Association, during the March 2023 "two sessions," annual plenary sessions of the National People's Congress and of the Chinese People's Political Consultative Conference; Xi also gave two speeches to the NPC and one to representatives of the PLA and People's Armed Police. *Xinhua*, "Full Text of Xi Jinping's Speech at First Session of

Party officials and the public to endure hardship and "dare to struggle."[6] Xi uses the Maoist phrase far more frequently than his predecessors, often when exhorting Party members to endure adversity and strive to achieve Party goals; it was inserted additional times into the Party Charter after the 20th Party Congress.[7]

Finally, China's leaders have begun to insist that Party cadres must be prepared for "extreme" and "worst-case" scenarios. Xi first mentioned "extreme scenario thinking" alongside "worst-case scenario thinking" at the May 2023 meeting of the Central National Security Commission.*[8] The two terms refer to methodologies Party cadres can supposedly use to "plan for worst-case scenarios, and encourage adopting proactive measures."[9] According to the testimony of Manoj Kewalramani, Chair of the Indo-Pacific Research Programme and China Studies Fellow at the Takshashila Institution, "extreme scenario thinking" enables understanding of feasible actions in unpredictable crisis situations by imagining the greatest level of severity that might occur in a given scenario. In contrast, "bottom line thinking" refers to setting minimum standards or red lines that cannot be breached, and making preparation to prevent predictable challenges.[10] Mr. Kewalramani pointed out that extreme scenario thinking could be used by Chinese strategists when considering the repercussions of proactive behavior, which could plausibly include a Chinese decision to attack Taiwan.[11]

Comprehensive National Security Concept Underpins Stronger National Security State

The "Comprehensive National Security Concept" forms the ideological basis for the subordination of all aspects of governance to national security. First outlined in a 2014 speech by Xi, it expands the concept of national security beyond traditional military threats and territorial integrity to nontraditional threats to regime survival, emphasizing the connection between domestic and foreign threats.[12] The initial concept laid out 11 types of security: political, military, territorial, economic, cultural, social, technological, information, ecological, resource, and nuclear.[13] Additional types were added over the years, and the concept now encompasses 20 types, including food, finance, overseas interests, space, deep sea, polar regions, biological, artificial intelligence, and data security.[14] Political security, however, is the most important task and is defined as safeguarding the leadership and governing status of the Party.[15] Economic growth and the risks created by excessive debt and other issues are significant aspects of the concept because the economy continues to serve as a key source of the CCP's legitimacy—and therefore its political security.[16] While economic and financial security are encompassed by the Comprehensive National Security Concept, the CCP is increasingly willing to accept potential economic costs in order to prioritize political security.[17]

14th NPC," March 14, 2023; Wang Cong and Tu Lei, "Xiconomics in Practice: President Xi Puts High-Quality Devt Front and Center at Two Sessions," *Global Times*, March 14, 2023; *Xinhua*, "Xi Stresses Enhancing Integrated National Strategies, Strategic Capabilities," March 8 2023; *Xinhua*, "Xi Calls for Guiding Healthy, High-Quality Development of Private Sector," March 7, 2023.

*"Bottom-line thinking" (底线思维) is sometimes translated as "worst-case scenario thinking."

Assessing the Party-State's Activity: New Measures for Control, Mobilization, and Resilience

The CCP has undertaken robust measures over the past decade to enhance its control, resilience, and capacity to mobilize resources in the economic, political, and military domains. While Chinese leaders' motivations for undertaking them remain unclear, taken collectively, the measures unquestionably make China better prepared to cope with a variety of domestic and foreign challenges.

Economic Preparedness

Chinese leaders' growing threat perceptions and concerns about the need to prepare for a more hostile international environment are increasingly reflected in their economic policies. This section focuses on China's efforts to enhance food, energy, and financial security through stockpiling and other policies designed to improve resilience, withstand temporary shocks, and weather more prolonged challenges. The inherent dual-use nature of Chinese economic preparations for a crisis make them complicated indicators of China's intentions or future action.* Chinese efforts to improve food and energy self-sufficiency and stockpile resources could be interpreted as a way to build resilience against a U.S. blockade in a Taiwan crisis. However, those same actions could also be a response to the country's widespread famines throughout the 20th century and energy crises that have affected certain provinces as recently as 2021.[18] Similarly, Chinese efforts to internationalize the RMB and develop alternative payments systems began as a response to contractions in global dollar liquidity in the aftermath of the 1997 Asia financial crisis and the 2008 global financial crisis.[19] However, the same systems that can ensure Chinese firms and their trading partners have ample access to credit and exchange during a recession also may allow China to insulate its financial sector and external trade from U.S. financial sanctions.

One thing is clear: the Chinese economy is more prepared today for a crisis scenario—one catalyzed by confrontation with the United States or another unpredictable event—than it was two decades earlier when the country was first constructing its strategic petroleum reserves and exploring RMB internationalization.[20] Even if Chinese motivations are entirely domestic, the United States can no longer rely on intertwined food supply chains, China's profound dependence on seaborne oil, and the blocking power of U.S. sanctions to enhance deterrence as strongly as they may have done in the past.

Food Security in China

General Secretary Xi has continued China's historic focus on food security by prioritizing efforts to increase domestic production, diversify supply chains, and build stockpiles. For centuries, Chinese food security has been inseparable from social stability.† China un-

*Dual-use is meant here to reflect that these preparations are both typical efforts that many governments undertake to reduce risks and promote resilience as well as the types of efforts that might be used to prepare for hostilities.

†During the Qing Dynasty (1644–1911), China experienced major famines between 1810 to 1907 that resulted in the deaths of tens of millions. These famines were often the catalysts for major rebellions or upheaval that diminished the government's authority and worsened socioeconomic conditions. These periods of starvation ultimately contributed to the dynasty's collapse.

der the CCP is no different. Well before the emergence of U.S.-China great power competition, CCP leadership has been extremely sensitive about maintaining food security.[21] The Great Famine in 1959–1961, China's last calamitous food crisis, is the largest famine in human history and continues to inform Chinese food policy today.*[22]

China faces structural challenges to long-term food security. China must feed 21 percent of the world's population on 8 percent of the world's arable land and 6 percent of the world's water resources.[23] Climate change, pollution, and rapid urbanization have magnified the effects of China's shortage of arable land. Between 2013 and 2019, destructive farming practices, among other contributing factors like the conversion of agricultural land for infrastructure and real estate, caused a more than 5 percent decline in China's cultivatable land.[24] What remains is often contaminated. Researchers estimate that 10.2 percent of arable soil is so polluted that it is no longer safe to grow products for consumption, and about 2.5 percent of China's farmland cannot be cultivated at all, mainly due to heavy metal contamination.[25] The country now has an estimated domestic planting area shortage of 90 million hectares.†[26] As a result, production growth for rice, wheat, and corn has slowed down during the last decade as land becomes increasingly unavailable.[27]

China also has geographic water imbalances. Eighty percent of Chinese water resources are concentrated in southern provinces.‡[28] This distribution is particularly damaging for food security. China's northern provinces account for 65 percent of the country's cultivated land and 50 percent of the country's grain production.[29] The mismatch between water supply and use means that the north of the country could run dry within 30 years.§[30] Climate change is exac-

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Kuan-Hui Elaine Lin et al., "Historical Droughts in the Qing Dynasty (1644–1911) of China," *Climate of the Past* 16:3 (June 2020): 911–931.

*Working from official statistics, scholars have estimated that the famine, which was the result of Chairman Mao's efforts to accelerate industrialization by shifting resources away from agriculture, led to the death of 30 million people and another 33 million births were lost or postponed, sowing the seed for the deeply tumultuous Cultural Revolution. Shige Song, "Mortality Consequences of the 1959–1961 Great Leap Forward Famine in China: Debilitation, Selection, and Mortality Crossovers," *Social Science & Medicine* Vol 31:3 (August 2010), 9.

†Beijing is taking a number of actions to try and rectify this. Central Document No. 1 from 2019 set out a "farmland red line" policy with a target of preserving at least 120 million hectares of farmland—an area slightly larger than Sweden. The National High-Standard Farmland Construction Plan (2021–2030) has also implemented a national plan for enhancement of farmland quality through farmland restoration measures, crop rotation practices, and fallow land systems. China has also purchased agricultural land beyond its borders. In 2021, Chinese investors owned 383,935 acres of agricultural land in the United States, though more recently U.S. officials have begun to curtail this practice. The lion's share of Chinese international land purchases are in Asia and Africa. Between 2011 and 2020, Chinese companies purchased or leased 6.48 million hectares of land for agriculture, forestry, or mining. Gustavo F. C. Ferreira, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 1, 2024; U.S. Department of Agriculture, *Foreign Holdings of U.S. Agricultural Land through December 31, 2021*, December 31, 2021; Daishi Chiba, Shin Watanabe, and Yuichi Nitta, "Chinese Companies Corralling Land around World," *Nikkei Asia*, July 13, 2021; Zhang Zhilong, "'Red Line' Policy Protects China's Arable Land," *CGTN*, February 23, 2019.

‡Mao Zedong acknowledged this 70 years ago when he famously remarked, "The South has plenty of water and the North lacks it, so, if possible, why not borrow some?" Carla Freeman, "Quenching the Thirsty Dragon: The South-North Water Transfer Project—Old Plumbing for New China?" *Wilson Center*.

§To mitigate this, in 2003, China's government launched the $60 billion South-to-North Water Transfer Project. The project diverts water from tributaries of the Yangtze River to replenish the dry north. China has also to tried to increase rainfall through cloud seeding, moved heavy industry away from water-stressed regions, and is investing in water management infrastructure. In April 2022, Vice Minister of Water Resources Wei Shanzhong estimated that annual investment in water-related projects could reach $100 billion annually. Gabriel Collins and Gopal Reddy, "China's Growing Water Crisis," *Foreign Affairs*, August 23, 2022.

erbating this. Researchers estimate that a combination of climate change-related drought and heightened levels of tropospheric ozone has accounted for yield losses of 10 percent in China.[31] Between 1981 and 2010, this amounted to annual losses of 55 million tons of crops.[32]

Chinese demand for food is increasing. From 1990 to 2019, Chinese per capita food available for consumption increased 34 percent.[33] Rising incomes mean this growth will continue. Between 2020 and 2050, researchers estimate that Chinese demand will grow a further 16 to 30 percent.[34] Cheng Guoqiang, a professor of agricultural economics and rural development at Renmin University in Beijing, estimates that rising food demand and challenges from climate change mean national food output will likely continue to decline as a percentage of domestic demand. Professor Cheng estimates that from 2000 to 2020, China's reliance on imports for its overall food supply increased from 6.4 percent to 34.2 percent.[35] He projects that by 2030 imports will rise by another 7 percentage points, with domestic production accounting for just 58.8 percent of China's total demand.[36]

Informed by their past and aware of present challenges, Chinese leaders have persistently prioritized food security as a prerequisite to maintaining power.[37] In many ways, these policies have been successful for the time being. Grains are at the heart of China's food security efforts. They are the country's main source of calories, animal feed, and raw materials for processed food products.[38] Since 1996, China has aimed to maintain 95 percent self-sufficiency for its key grains.[39] Though Chinese production has fallen below the 95 percent target, it is still largely self-sufficient in corn, rice, and wheat.¶[40]

Corn: China is the second-largest corn producer in the world and is mostly self-sufficient in the crop.[41] Corn is China's largest food crop in terms of production. In the 2023 marketing year,† China produced 288.8 million metric tons of corn domestically.[42] China is also the world's largest corn importer, and in 2023 it imported 26.2 million metric tons, primarily from Brazil (11.9 million metric tons), the United States (7.1 million metric tons), Ukraine (5.5 million metric tons), Bulgaria (739 thousand metric tons), and Burma (Myanmar) (381 thousand metric tons).‡[43] In 2023, China consumed 307 million metric tons of corn and had a dependency rate of 8.3 percent.§[44]

¶The conclusion that China has fallen below the 95 percent target is based on calculations below. Additionally, China now imports more grains—most notably soybeans, corn, wheat, and rice—than any other country. Gustavo F. C. Ferreira, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 1, 2024; Zongyuan Zoe Liu, "China Increasingly Relies on Imported Food. That's a Problem," *Council on Foreign Relations*, January 24, 2023.

†Crop production is measured across a marketing year, or the 12-month period starting just after harvest when a crop may be sold. Since all crops have different harvest schedules, marketing seasons are not precisely comparable across crops or between crop production and import and export values (which tend to reflect calendar years). To avoid confusion, all marketing years are referred to by the year in which they started. Additionally, data on imports and exports reflect values from the year in which the marketing year began.

‡Figures for corn imports are determined using the HS code 1005.90 for corn crops excluding seeds. This may include corn meant for human consumption as well as for livestock feed or other uses. To ensure foreign producers are unable to outcompete and undermine domestic producers, China manages its annual volume of corn imports—typically between 25 and 30 million tons. Gustavo F. C. Ferreira, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 1, 2024, 6.

§Dependency rate refers to imports as a percentage of total yearly stock (domestic production + imports). Subtract this figure from 100 to determine the percentage of yearly stock met by

Rice: China is nearly self-sufficient in milled rice. China produced 144.6 million metric tons of milled rice in 2023 and imported an additional 1.8 million metric tons, making it both the world's largest producer and importer.*[45] China's primary sources of imported rice were countries in South and Southeast Asia, including Vietnam, Thailand, and Burma.†[46] In 2023, China consumed 148.1 million metric tons of rice and had a dependency rate of 1.2 percent.‡[47]

Wheat: China is mostly self-sufficient in wheat. Wheat is China's third most important crop in terms of metric tons of production. In 2023, China was the largest global producer, yielding 136.6 million metric tons of wheat while importing 11.9 million metric tons.[48] Most of these imports came from Australia (6.9 million metric tons), Canada (2.5 million metric tons), the United States (925 thousand metric tons), and France (815 thousand metric tons).§[49] In 2023, China consumed 154 million metric tons of wheat and had a dependency rate of 8 percent.[50]

Pork: In addition to these grains, China has identified pork as important for its food security. China is nearly self-sufficient in pork. Pork is China's primary protein and accounts for about 60 percent of all meat consumed in the country.[51] In 2023, China produced 57.9 million metric tons of pork, making it the largest producer globally.[52] It imported 1.5 million metric tons, with Brazil (402 thousand metric tons), Spain (378 thousand metric tons), Canada (132 thousand metric tons), and the United States (122 thousand metric tons) as primary suppliers.¶[53] In 2023, China consumed 59.7 million metric tons of pork and had a dependency rate of 2.5 percent.[54]

China's Global Agriculture Ambitions: The Smithfield Acquisition

In 2013 the Chinese firm Shuanghui, now called WH Global, acquired Smithfield Foods for $4.7 billion ($7.1 billion including debt), the biggest acquisition of a U.S. company by a Chinese firm up to that time.[55] The Committee on Foreign Investment in the United States (CFIUS) approved the transaction.[56] Four years after being acquired by WH Group, Smithfield purchased Kansas City Sausage Co. LLC, one of the United States' largest sausage producers and processors.[57]

As China's largest pork producer, Shuanghui's expansion into overseas markets was aligned with China's "going out" strategy to encourage some of its national champions to become multinational leaders.[58] Ostensibly, China aimed to learn how to scale up its meat production, increase sanitary standards, and secure imports

China's domestic production.

*Milled rice has been processed and had the hull removed, making it suitable for human consumption. Rough rice has not been processed and is generally not intended for human consumption. Import values for milled rice are based the six-digit HS classification for semi- or wholly-milled rice (1006.30).

†Figures for rice imports are determined using the HS code 1006.30 for semi-milled or fully milled rice, whether or not it is polished or glazed.

‡Consumption can sometimes exceed production and imports combined. This likely means China is supplementing consumption with stocks left over from previous years.

§Figures for wheat imports are determined using the HS code 1001 for wheat and meslin.

¶Figures for pork imports are determined using the HS code 0203 for meat of swine, fresh, chilled, or frozen.

China's Global Agriculture Ambitions: The Smithfield Acquisition—*Continued*

to respond to growing domestic demand for pork.[59] The deal also meant that Shuanghui acquired 146,000 acres of U.S. farmland.[60]

China has an affinity for pork. The character for home or family in Chinese, 家 *jia*, depicts a pig under a roof. This common character is used in the word for country or nation (国家 *guojia*). Indeed, Xi's first trip to the United States was to study hog farming.[61] As China has gotten wealthier, its demand for meat has grown and China's annual pork consumption now exceeds that of the United States by a large margin.[62]

Since the Smithfield acquisition, Chinese imports of U.S. pork products have increased.* From $704 million in 2012, Chinese pork imports from the United States peaked at $2.3 billion in 2020, settling back to $1.2 billion in 2023, still a 76 percent increase from 2012 levels.†[63]

A decade on, the Smithfield acquisition remains contentious. Some argue that growing agricultural exports to China is a net positive, as is generally the view for U.S. agricultural exports.[64] Further, the United States could limit exports to China if necessary, regardless of the ultimate ownership of a U.S. subsidiary. Others have raised concerns that the deal could pose "food safety, food security and intellectual property concerns" or increase domestic U.S. prices if exports to China decreased U.S. supply.[65] Further, recent years have seen growing concern about purchases of U.S. farmland by Chinese entities.[66]

Smithfield continues to have a large presence in the United States.[67] It retained the U.S. management team after the acquisition, and its products continue to be available in the United States.[68] Recently, the Hong Kong-listed parent of Smithfield announced it would separate its North American and European operations, though both will remain WH Group subsidiaries (with a U.S. initial public offering of the spun-off Smithfield contemplated).[69]

Significant Import Reliance for Soybeans: The last product China has identified as a staple is soybeans, which is the most significant challenge to Chinese domestic food self-sufficiency. While soybeans can be directly consumed, China primarily uses the crop as

*After Smithfield's acquisition, exports as a share of its total pork sales increased, although it is unclear what portion of those exports were ultimately consumed in China. Smithfield does not break down export data by specific countries. In the five years leading up to the acquisition, Smithfield's export sales made up, on average, 16.2 percent of its total pork volume. Following the acquisition, in 2014, its export sales rose to 23 percent of total volume and continued to rise to 25 percent in 2015. In 2016, Smithfield stopped publishing its annual investor report. Smithfield Foods, Inc, "Form 10-K FY 2015," January 3, 2016; Smithfield Foods, Inc, "Form 10-K FY 2014," December 28, 2014; Smithfield Foods, Inc, "Form 10-K FY 2013," April 28, 2013; *Smithfield Foods, Inc*, "Form 10-K FY 2012," April 29, 2012; Smithfield Foods, Inc, "Form 10-K FY 2011," May 1, 2011; Smithfield Foods, Inc, "Form 10-K FY 2010," May 2, 2010; Smithfield Foods, Inc, "Form 10-K FY 2009," May 3, 2009.

†The 2020 peak occurred because Asian Swine Fever outbreaks caused China to cull domestic hogs, severely affecting domestic production. Some in Congress wanted investigations when pork prices increased and exports to China surged in 2020. Shibing You et al., "African Swine Fever Outbreaks in China Led to Gross Domestic Product and Economic Losses," *Nature Food* 2 (2021), 802–808; *Reuters*, "U.S. Senators Question Meatpackers over Exports to China during Pandemic," June 24, 2020.

animal feed or converts it into edible oils.[70] Unlike its other staples, China is heavily dependent on imported soybeans. In 2023, China produced just 20.8 million metric tons of soybeans but imported 87.4 million metric tons.[71] Of this volume, 59.7 million metric tons were purchased from Brazil and 22.4 million metric tons (25.6 percent) were purchased from the United States.[72] In 2023, China consumed 121.7 million metric tons of soybeans and had a dependency rate of 81.1 percent.[73] China is unlikely to resolve this dependency by increasing domestic production. It costs nearly 30 percent more to grow soybeans in China than in the United States, while the yield is 60 percent less.[74]

Table 1: China's Foreign Dependency for Staple Foods, Million Metric Tons

Staple Food	**Domestic Production**	**Imports**	**Global Import Dependency Rate**
Corn	288.8	26.2	8.3%
Rice	144.6	1.8	1.2%
Wheat	136.6	11.9	8%
Soybeans	20.3	87.4	81.1%
Pork	57.9	1.5	2.5%

Source: Various.[75]

Efforts to Improve Food Security

Chinese leaders are trying to improve food security by expanding agricultural land, investing in productivity enhancing technology, reducing demand, and engaging in stockpiling. These policies, however, have their limits. Environmental degradation, climate change, and growing consumption mean China's domestic food security will worsen in the short term—even if it becomes less reliant on the United States.

Gustavo Ferreira, a senior agricultural economist at the U.S. Department of Agriculture, points out that China has steadily increased state investment in agricultural research and development. Chinese officials hope to strengthen domestic scientific and technological expertise in modern agriculture and improve the country's agricultural equipment. In particular, China has focused resources to boost the development of its seed industry.*[76]

China has also tried to reduce domestic demand, focusing on soybeans. China has urged domestic livestock feed producers to incorporate alternative oilseeds like rapeseed or sunflower seed which could be sourced from countries such as Canada or Ukraine.[77] In 2023, Chinese officials implemented a three-year action plan to reduce soybean meal ratios in animal feed from 14.5 percent in 2022 to less than 13 percent by 2025. Such a change could reduce imports by as much as four million metric

*The Chinese Academy of Agricultural Sciences (China's national agricultural scientific research organization) laid out a five-year development plan calling for the construction of new laboratories, a grain crop science center, and enhancements in breeding capacity for crops and livestock. Genevieve Donnellon-May and Zhang Hongzhou, "Hungry China's Growing Interest in 'Future Foods' and Alternative Protein," *Diplomat*, May 4, 2022; *Xinhua*, "China Aims High in Agricultural Sci-Tech Innovation," January 13, 2022.

tons a year.[78] All else equal, this would reduce Chinese consumption by 3.7 percent and leave them with an import dependency rate of 80.4 percent.*

China is also diversifying soybean imports away from the United States. While Brazil had been slowly gaining market share starting about 15 years ago, the erosion of the U.S. position in China's market accelerated dramatically with the 2018 trade war. Chinese purchases of U.S. soybeans collapsed in 2018 following a 25 percent tariff implemented by China. During the 2016–2017 season, immediately prior to the trade war, China sourced 41 percent of its soybeans from the United States and 46 percent from Brazil.[79] During the 2018–2019 season, this shifted. China sourced some 75 percent of imports from Brazil compared with 19 percent from the United States.[80] While trade has since stabilized, in 2023 China still sourced 68 percent of its soybeans from Brazil compared with 26 percent from the United States.[81] Expansive South American production capacity means China could theoretically divert all its soybean procurement to the region. However, total reliance on South American imports would expose China to new risks from geographic and growing season concentration.†[82]

China has found other willing partners in its Belt and Road Initiative (BRI) members. Since its introduction in 2013, China has signed over 100 agricultural cooperation agreements with BRI countries.[83] Russia has emerged as a key supplier. In 2023, following a meeting between General Secretary Xi and Russian President Vladimir Putin, a Russian company signed a $26 billion agreement to supply 70 million tons of grain, legumes, and oilseeds to Chinese buyers over the next 12 years.‡[84] This builds on longstanding efforts to increase two-way trade such as the Russia-China Land Grain Corridor, an initiative launched in 2016 to build out infrastructure supporting the export of grain by Russia and other Eurasian countries to China.[85] Russia's abundant wheat production could serve as additional insurance to safeguard Chinese food security.[86]

China's Significant Food Stockpiling

In addition to other policies to enhance food security, China maintains large emergency food stockpiles of agricultural products and

*Calculation shows the change in the import dependency rate if the entirety of the reduced demand is offset by a decline in imports with no changes to other consumption or domestic production.

†Although the United States' and Brazil's soybean growing seasons are complementary, Brazil has been increasingly able to capture U.S. market share during peak U.S. export season. Typically, more than 60 percent of annual U.S. soybean exports to China occur between October and January, when Brazilian supplies are presumably low. However, in 2024, U.S. soybean exports to China during that four-month period were 2.8 million metric tons more than Brazil. Historically, outside of 2018–2019 and 2019–2020, at the gap would be a minimum 13 million metric tons and possibly up to 25 million metric tons. Karen Braun, "Brazil's Intrusion on US Soy Exports to China Somewhat Mimics Trade-War Era," *Reuters*, March 22, 2024.

‡Since 2022, China has lifted numerous sanitary restrictions that have previously prevented the import of Russian agricultural products. In 2022, China began to allow the import of spring wheat and barley from Russia. In 2023, peas and millet received approval. The two countries are currently negotiating lifting restrictions on the Chinese import of Russian corn and rice. Genevieve Donnellon-May and Zhang Hongzhou, "The Sino-Russian Land Grain Corridor and China's Quest for Food Security," *Asia Society Policy Institute*, May 8, 2024; *World Grain*, "Russia, China Expand Agricultural Trade," November 8, 2023.

pork, significantly out of proportion to global norms.* The composition, volume, and quality of these reserves are a state secret and can only be estimated.[87] Official communications state that China has built nearly 700 million metric tons of grain storage capacity.[88] Using data provided by the U.S. Department of Agriculture (USDA), Nikkei estimates that China's share of global grain stocks (corn, rice, wheat, soybeans) increased by at least 15 percent for each crop from 2011 to 2021.[89] The USDA estimates that as of the first half of 2022, China holds 69 percent of the world's corn reserves, 60 percent of its rice, and 51 percent of its wheat.[90] With only 18 percent of global population, China holds just over half of global staple grain reserves. China also maintains a strategic pork reserve. In July 2023, the Chinese government indicated it stockpiled 20,000 tons of pork in order to replenish national reserves, suggesting the total reserve volume is higher.[91]

Because the true size of its stockpiles is unknown, it is uncertain how long these reserves could sustain China.[92] While anecdotal evidence suggests China has somewhere between one to two years' worth of stocks of key agricultural commodities, even Chinese officials with complete access to information likely cannot give a precise estimate.[93] The scale of China's stocks require a very large grain storage infrastructure and complex management to ensure the viability of the stored commodities.[94] As a result their true size and usability is likely not fully assessable.†

Perspective on Food Security Efforts

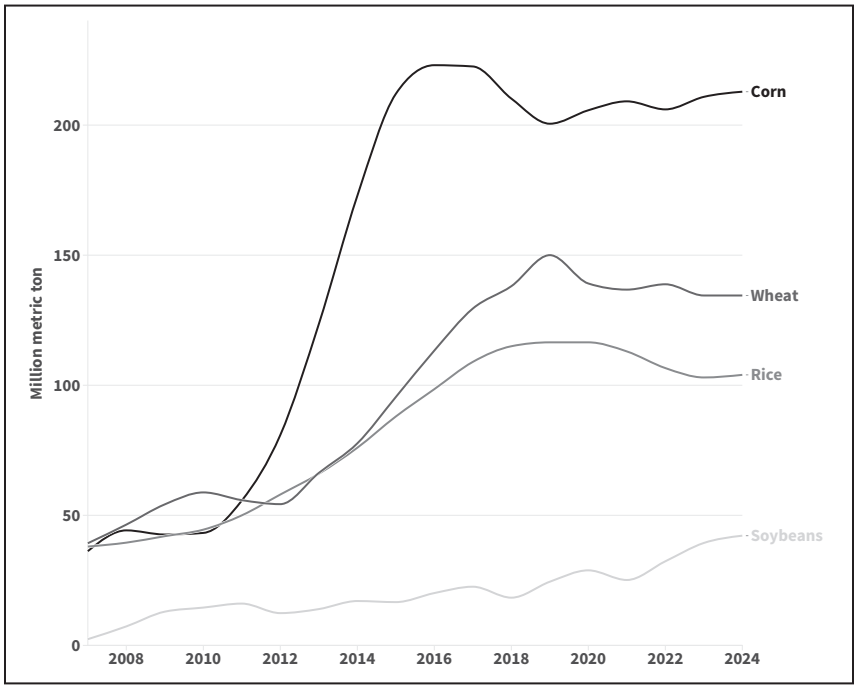
In terms of evaluating China's food stockpiling, it is notable that projections of Chinese grain stockpiles have not substantially increased in recent years. The USDA projects that total Chinese ending stocks—the amount of grain left in the country at the end of each year and an imperfect proxy for reserves—peaked for wheat and rice in 2019.[95] Corn peaked even earlier, in 2016.[96] Since then ending stocks have fallen, with rice declining 10.7 percent.[97] In contrast, Chinese soybean ending stocks have continued to rise, though they remain far below Chinese stockpiles of corn, wheat, or rice.[98]

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*Note that official data on these stores are not publicly available but can be pieced together using official statements and proxy indicators.

†There are also concerns about the accuracy and reliability of grain reserves data as well as China's broader agriculture production data. A lack of transparency, recent arrests and investigations related to corruption, and quality concerns all obscure China's stockpiling. For example, in 2022, the former top official at the National Food and Strategic Reserves Administration (responsible for centralized control over stockpiled grain), Zhang Wufeng, was sentenced to ten years in prison for taking bribes, and in May 2024, current Agriculture and Rural Affairs Minister Tang Renjian was placed under investigation by the anti-graft agency for "serious violations" of the law. More broadly, some academics have called into question the overall reliability of data in the agriculture sector. They argue that important government subsidies to the major grain-producing counties created incentives for over-reporting production and that the lower administration level that generates the agricultural data has a higher risk of data manipulation and misreporting. Gustavo F. C. Ferreira, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 1, 2024, 15; *Bloomberg*, "China Says Agriculture Minister Tang Renjian Is Under Investigation," May 18, 2024; Yang Zekun, "Former Head of China's Food Reserves Administration Sentenced to 10 Years in Jail," *China Daily*, December 15, 2023; Zhun Xu et al., "China's Grain Production: A Decade of Consecutive Growth or Stagnation?" *Monthly Review* 66:25 (May 2014).

Figure 1: Ending Stock of Key Chinese Food Staples, 2007—2024, Million Metric Tons



Source: U.S. Department of Agriculture Foreign Agricultural Service, "*Corn ending stocks, Wheat ending stocks, Rice ending stocks, Soybean ending stocks* [2007–2024]," via FAS Production, Supply, and Distribution, September 19, 2024.

Energy Security in China

China's Energy Composition

China's massive population and rapid industrialization has meant that demand for energy has outstripped domestic sources of supply. As a result, China has become deeply reliant on external sources of key energy commodities. Foreign oil imports, in particular, are China's largest strategic energy vulnerability. Xi has continued to push for enhanced energy security saying the country "must hold the energy food bowl in its own hands."[99] However, his efforts are influenced by various factors, including concerns about market volatility, making it difficult to discern the relative significance of national security as a driver for his efforts.

Coal

While China may be most concerned with oil imports, coal is the country's most significant energy resource. In 2022, it contributed 61 percent of the country's total energy supply.*[100] Coal is central to Chinese energy security. The country's abundant domestic resources and enormous coal power generation capacity make it a significant

*In 2022, China relied upon coal, oil, and natural gas for 86.7 percent of its total energy supply. International Energy Agency, "China."

hedge against energy insecurity and geopolitical uncertainty.[101] Chinese reserves also mean coal is the only major energy commodity where the country is typically a net exporter.[102] This has allowed Chinese officials to focus energy contingency plans on production, rather than stockpiling or energy import infrastructure. China's natural supplies have allowed the country to pursue a strategy focused on establishing a system of "dispatchable coal reserves."[103] Under the strategy, China's National Development and Reform Commission aims to develop the capacity to rapidly increase coal production by 300 million tons per year by 2030.[104] Combined with an abundance of coal power plants, China could surge coal production and allow its coal-fired power capacity to fill energy production gaps.* Because of these factors, China stockpiles a relatively meager 200 million tons of coal at major power plants, approximately a 30-day supply.†[105]

Natural Gas

Natural gas is less critical to China's energy mix than either coal or oil. In 2021, natural gas made up just 3.1 percent of China's total electricity generation.[106] China primarily uses natural gas to heat homes, to cook food, and as an input in certain industrial processes.[107] Replacements such as coal or electrical heaters can substitute for gas' most important use cases.[108] Still, China is very dependent on foreign natural gas. In 2023, China imported 165.6 billion cubic meters (BCM), or 42.3 percent of its total natural gas consumption.[109] China's import dependence is worsening. In 2023, the country's reliance on foreign natural gas increased 1.1 percent from 2022.[110] In recent years, China has focused on rapidly expanding its natural gas storage capacity. CEDIGAZ, a gas analytics firm, estimates that Chinese firms operate 21.3 BCM of working underground gas storage capacity plus an additional 8.1 BCM of tank storage at liquefied natural gas import facilities.[111] The firm forecasts that the country's gas storage capacity could rise to 80 BCM of working gas storage capacity by 2030.[112] In 2023, China consumed 395 BCM of natural gas.[113] By 2030, China National Petroleum Corporation forecasts the country will consume between 550 and 600 BCM of natural gas.[114]

Chinese policymakers appear to perceive natural gas storage as more of a market management tool than a safeguard ensuring energy security. Gabriel Collins, fellow at Rice University's Baker Institute, notes, for example, that in China's 2023 Energy Work Guiding Opinion, a document produced by China's National Energy Administration and disseminated to all relevant provincial-level agencies to guide and help implement energy policies, policymakers associate natural gas development with "bolstering energy system regulation capacity."[115] Because of this, he suggests Chinese energy officials are more concerned with managing natural gas's seasonal price volatility—buying cheap natural gas in the summer and storing it to

*In 2022, China's average coal plants utilization rate was 53 percent, far lower than its historic average of 70 percent. China's low typical utilization rate means it has ample space to surge coal power output if needed. Bing Han and Choon Kiat William Chia, "China's Record Coal Capacity Approvals in 2022: Will Carbon Targets Still Be Met?" *S&P Global*, April 27, 2023.

†China's stockpile size is variable and fluctuates based on a range of different factors. For example, in January of 2024, Chinese coal stockpiles were as low as 120 million tons before low prices allowed stocks to climb to 162 million tons by May 2024. *Bloomberg News*, "China's Glut of Coal Delivers Early Success in Dodging Summer Shortages," June 25, 2024.

use when prices spike in the winter—than ensuring the country has a robust, contingency supply.[116]

Oil

China is deeply reliant on foreign oil. However, unlike natural gas, which is nonessential and can be substituted with coal, oil's centrality to both the domestic economy and the military make it China's most significant resource vulnerability in a crisis scenario.[117] Chinese officials have noted that electricity supply problems "can be solved by ourselves" but that "oil imports are different.... If our oil imports are cut off, it affects the whole nation, not just certain provinces, and we no longer maintain self-reliance."[118] Chinese strategists have long viewed the country's increasing reliance on foreign oil imports as a key vulnerability and a potentially serious constraint on Chinese strategic action.[119] This has compelled China to pursue a series of diversification and stockpiling initiatives to mitigate the impact of potential future disruptions.

China became a net oil importer in 1993.[120] In 2023, the country was only able to produce 27 percent of its oil domestically.[121] China imported an average of 11.3 million barrels a day while producing 4.2 million barrels a day. China has tried to minimize the risks brought about by its overreliance on foreign sources by maintaining a diverse mix of friendly suppliers. In 2023, China sourced 4.4 percent of its oil imports from the G7 (with the United States and Canada being the largest suppliers).[122] Instead, China has historically sourced around half of its imports from Gulf countries.[123] Because of this, China has sought closer ties with the region. (For more on China's engagement with the Middle East, see Chapter 5, "China in the Middle East.") China is also slowly building a naval presence in the area. The U.S. Department of Defense lists the Strait of Hormuz as a "known focus area" for Chinese military planners.[124] Analysts suggest China is building a robust presence to potentially counter U.S. efforts to block oil transit during a crisis.[125]

In 2023, Russia emerged as China's most important single supplier.[126] Buoyed by the "no limits" partnership they declared in February 2022, Chinese refiners have rapidly expanded purchases of the Russian crude that had flowed to Europe prior to Russia's invasion of Ukraine.*[127] However, even among its partners, China is wary of the risks that come from overreliance. Shipping insiders believe China caps oil imports from any country at around two million barrels per day.[128]

Despite China's supply diversification, most of these oil imports reach China via seaborne tankers. Asia's island geography means that 80 percent of China's total oil imports must pass through the Strait of Malacca, separating Indonesia and Singapore, making the waterway a critical vulnerability.[129] Xi's predecessor, General Secretary Hu Jintao was profoundly concerned by this

*In response to the invasion of Ukraine, the G7 has tried to impose a price cap of $60 dollar per barrel on Russian crude oil exports. While the G7 has not been able to fully enforce it, their sanctions and pressure has led to a minor discount in Russian crude. As a result, in 2023, China was able to purchase Russian crude at an average price of $77 per barrel. This was around a $6 dollar per barrel discount and resulted in a nearly $5 billion total discount in 2023. *Bloomberg*, "Russia Becomes Top China Oil Supplier for First Time since 2018," January 22, 2024; U.S. Energy Information Administration, *Brent Crude Oil Prices Averaged $19 Per Barrel Less in 2023 than 2022*, January 2, 2024.

and called China's overreliance on the route the "Malacca Dilemma."[130] However, under Xi, China's susceptibility to a disruption in the Strait of Malacca has worsened. In 2013, Xi's first full year as General Secretary, China relied on imports for 57 percent of its total crude oil supply. By 2023, its import rate had grown to 76 percent.[131] China's less secure seaborne oil imports have also similarly risen, growing from 91 percent in 2009 to 97 percent in 2023.[132] China has had some options to slow this growth, such as a new oil pipeline with Russia that has been discussed since 2018.[133]

Instead, Chinese officials have prioritized constructing large oil storage facilities and developing and encouraging substitutes, such as electric vehicles (EVs), wherever possible.* In 2021, 49 percent of total final consumption of oil products was used for transportation.[134] As a result, one way China is hoping to decrease its overall demand is through alternatives such as transportation electrification. Starting in 2001, China's Ministry of Science and Technology issued a strategic plan to develop new energy vehicles and conducted research into them under the 863 Program, a high-tech development plan.[135] Over the next two decades, China continued to focus resources into the program.

With strong state support, China's domestic EV sector was able to develop quickly, and starting in 2020, it began to rapidly gain market share in new consumer car sales. The International Energy Association projects that in 2024, EVs could account for up to 45 percent of new car sales in China, up from 30 percent in 2022.[136] This would mean that by the end of 2024, around 10 percent of China's total passenger vehicle fleet is likely to be either an EV or a plug-in hybrid.[137] By 2030, one in three cars on Chinese roads could be EVs.[138] Chinese EV adoption is meaningfully slowing China's oil consumption growth.† If trends continue, the International Energy Association estimates that by 2030, EVs could reduce the country's daily oil consumption by two million barrels a day and, by 2035, over three million barrels a day.[139]

While such widespread adoption would be an important milestone, it still only represents a fraction of China's overall oil demand. Researchers affiliated with China National Petroleum Corporation project that China's oil demand is expected to peak by 2030 at between 780 million and 800 million metric tons per year, or around 15.6 million to 16 million barrels per day.‡[140] To ensure China can satisfy its consumption needs in a crisis scenario, Chinese leaders have undertaken a massive buildout of its domestic oil storage.

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*Chinese firms continue to also engage in domestic drilling efforts, but limited natural reserves constrain their ability to become a meaningful replacement for China's foreign dependence and instead appear to emphasize "running harder to stay in place." Gabriel Collins, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 1, 2024; *Reuters*, "China's Oil Production Rises to 208 Mln Tons in 2023—CCTV," January 9, 2024.

†While EVs can slow consumption, it is unclear how long and where the bright line sits for EVs to reduce overall gasoline demand. It is dependent on a number of factors, most notably how many new internal combustion engine vehicles also are sold in the coming years. Gabriel Collins, using Norway's substantial EV adoption as a reference point, estimates that China would need around 80 million EVs for this to happen. Gabriel Collins, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 1, 2024.

‡It is unclear how China National Petroleum Corp accounts for EV adoption within its projections. Nonetheless, the numbers show the absolute scale of Chinese oil demand.

From 2016 to 2024, China's aboveground crude oil inventory has ranged from 850 million to just over one billion barrels.[141] As of late May 2024, China had about 942 million barrels of crude oil stored in aboveground tanks onshore.*†[142] China's total storage capacity is likely larger. Kayrros, an energy data provider, suggest that China's total crude storage capacity is currently a little over 1.8 billion barrels.[143]

China has grown its storage capacity considerably over the last two decades. From 2005 to 2024 storage has roughly tripled while overall oil consumption has doubled.[144] Chinese capacity tends to cluster around oil ports capable of accepting very large crude carriers.[145] This means they are predominantly located in Shandong, Zhejiang, Liaoning, and Guangdong provinces. Shandong and the Greater Shanghai Area is China's largest oil import and storage zone. The region is home to more than 500 million barrels of storage capacity.[146]

China's Strategic Petroleum Reserve (SPR) is a subset of its overall reserve capacity. Discussions of an SPR began in the 1980s, though a drawn-out debate over its potential costs and utility delayed construction until 2004.[147] China's growing foreign dependence justified its creation, and, by 2009, the Phase I SPR sites—located at Zhenhai, Zhoushan, Huangdao, and Dalian—were built and filled with 103 million barrels of oil.[148] Phase 2 was completed in 2019 and can store roughly 200 million additional barrels of oil.[149] A third phase of the project is currently under consideration and would bring the SPR's total capacity to around 500 million barrels.[150]

Notably, after Russia's invasion of Ukraine demonstrated the vulnerability of aboveground storage, China has likely accelerated the development of underground oil storage.‡[151] In 2023, China National Petroleum Corporation (CNPC) announced the launch of a special "Mined Cavern Underground Oil Storage Laboratory" signifying a long-term commitment to expanding underground oil storage in China.§[152]

Offsetting Potential of China's Oil Stockpiles in a Complete Blockade

China's enormous oil storage capacity provides a considerable lifeline to help the country weather a complete blockade of its seaborne oil supply. In addition to its storage, China has a number of other levers it can pull to reduce and prioritize demand. China

*This specific estimate comes from commercial data provider BreakWave Advisors, though it is broadly in line with similar firms such as Kayrros and Ursa Space Systems. Gabriel Collins, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 1, 2024.

†This number includes strategic petroleum reserve sites with a total storage capacity of approximately 300 million barrels of crude oil. Michal Meidan, "China's SPR Release: A Test of Mechanisms Rather than a Show of Market Might," *OIES*, September 2021.

‡Aboveground oil and refined product storage tanks are vulnerable to even small strikes from drones, cruise missiles, and other munitions. Successful attacks not only disrupt supplies but can also trigger catastrophic fires. Both Russia and Ukraine have targeted oil production and storage facilities with success. Constant Méheut, "Ukraine, Stalled on the Battlefield, Targets Russia's Oil Industry," *New York Times*, May 14, 2024.

§Planning for the Mined Cavern Underground Oil Storage Laboratory began in 2019. China also already had at least 100 million barrels of underground storage capacity before Russia's invasion of Ukraine. Gabriel Collins, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 1, 2024, 21.

Offsetting Potential of China's Oil Stockpiles in a Complete Blockade—*Continued*

can stop the export of refined oil products, implement rationing to reduce non-military demand, continue to receive shipments via land-based pipelines from Burma, Kazakhstan, and Russia, and even work with Russia to rapidly bring online additional pipelines that would replace the existing seaborne supplies China gets from the Russian port of Nakhodka.

Mr. Collins estimates that taken together, a large stockpile, aggressive rationing, and secondary fuel supply measures mean China's total stocks could last between two to four years in a crisis situation. Each incremental 100 million barrels of storage meets approximately two months of consumption needs in the "no additional overland supplies" scenario and closer to six months when augmented with Russian overland pipeline expansions.[153]

Aggressive Chinese Efforts to Ensure Financial Sanctions Resilience

China's reliance on payments networks that are vulnerable to U.S. financial sanctions to process a majority of its external trade and finance is an asymmetric vulnerability that could be leveraged against it. Chinese leaders are acutely aware of this weakness and are building alternative financial networks to help circumvent or evade U.S. financial sanctions. Despite these efforts, China is unlikely to succeed in the short term. As a result, a maximalist U.S. sanctions campaign against China could place at least $3 trillion in annual trade and financial flows, not including foreign reserve assets, at immediate risk of disruption.*[154]

The possibility of U.S. financial sanctions has motivated China to pursue the creation of an alternative payments network. To circumvent U.S. financial sanctions, China must succeed across three areas: (1) promote international adoption of China's currency, the renminbi (RMB), as a viable alternative to the U.S. dollar; (2) develop payments systems capable of facilitating RMB transactions without U.S. oversight or interference; and (3) secure willing partners to conduct RMB transactions using Chinese payments systems.

Sufficiently internationalizing the RMB as a viable alternative to the dollar and identifying partners willing to transact in RMB are likely the most difficult challenges Chinese authorities face. Policies that internationalize the RMB involve explicit tradeoffs that affect Chinese political imperatives to maintain financial and exchange rate stability.[155] Additionally, the threat of U.S. sanctions and secondary sanctions could prove to be an insurmountable obstacle for

*Chinese banks do not fully report the total value of their cross-border transaction settlements so this number is a conservative estimate of the scale of disruption if China's Big Four banks (the Industrial and Commercial Bank of China, the China Construction Bank, the Bank of China, and the Agricultural Bank of China) were sanctioned. The number captures the estimated role of China's Big Four banks in facilitating trade in goods and services, repatriation of income from investments, direct investment, and portfolio investments. Charlie Vest and Agatha Kratz, "Sanctioning China in a Taiwan Crisis: Scenarios and Risks," *Atlantic Council*, June 21, 2023.

many of China's trading partners that are aligned with, or reliant on, the United States and its financial infrastructure.

RMB Internationalization

China is actively promoting the internationalization of the RMB to reduce reliance on the U.S. dollar. Chinese officials are motivated by the economic and security benefits that would accrue to China's economy from controlling an internationally used currency. China is trying to internationalize the RMB through the development of offshore RMB pools and the settlement of bilateral trade in RMB.

The internationalization of the RMB can be understood and measured in two interrelated but distinct ways: its use in transactions and its role as a store of value. The RMB's use in transactions refers to its ability to denominate the value and facilitate the exchange of goods, services, or other currencies.* The RMB's role as a store of value refers to its ability to maintain value over time. For government actors it is the currency in which they choose to hold their reserves. In the private sector it is often the currency in which they choose to issue debt.[156] Encouraging the use of the RMB in transactions is more important than promoting its use as a store of value within the context of sanctions circumvention.[157]

RMB internationalization is also best understood as a spectrum. Across this spectrum, China can achieve a high-threshold of internationalization where the RMB surpasses the U.S. dollar's role in transactions and as a store of value. Crossing this threshold would mean the RMB has become a truly international currency,† used not only by China but also by third countries in transactions that do not involve a Chinese party. However, it is unlikely China will be able to reach this level of RMB internationalization. Achieving this would require China to implement structural changes to its economy, including liberalizing its capital account and adopting policies that would easily allow foreign entities to accumulate claims on RMB-denominated assets.‡[158]

Nevertheless, China may still be able to achieve a low-threshold of internationalization by using the RMB in bilateral transactions.[159] With sufficient bilateral use of the RMB, China could potentially circumvent some U.S. sanctions because the RMB has become sufficiently internationalized for its trading partners to exclusively rely on it to conduct China's most important business.[160] In this scenario U.S. sanctions would still cause significant disruptions to China's

*This captures what is sometimes referenced as money's unit of account and medium of exchange function. A currency that is the unit of account for a specific transaction is highly likely to also function as the medium of exchange for that transaction. Richard Friberg, "The Currency Denomination of Exports—A Questionnaire Study," *Journal of International Economics*, Vol 75: 1 (May 2008): 54–69.

†A currency that is preferred in international exchanges in which that currency is neither the importer nor the exporter's official currency. Linda S. Goldberg and Cédric Tille, "Vehicle Currency Use in International Trade," *Federal Reserve Bank of New York*, January 2005.

‡For example, a sustained current account deficit would lead to other countries accumulating RMB-denominated claims on Chinese assets. An open capital account would also allow for the accumulation of RMB-denominated claims while building investor confidence that they would be able to easily sell those assets at any time. Michael Pettis, "Will the Chinese Renminbi Replace the US Dollar?" *Review of Keynesian Economics* 10:4 (October 2022); Barry Eichengreen and Masahiro Kawai, "Issues for Renminbi Internationalization: An Overview," *Asia Development Bank Institute*, No. 454 (January 2014): 11.

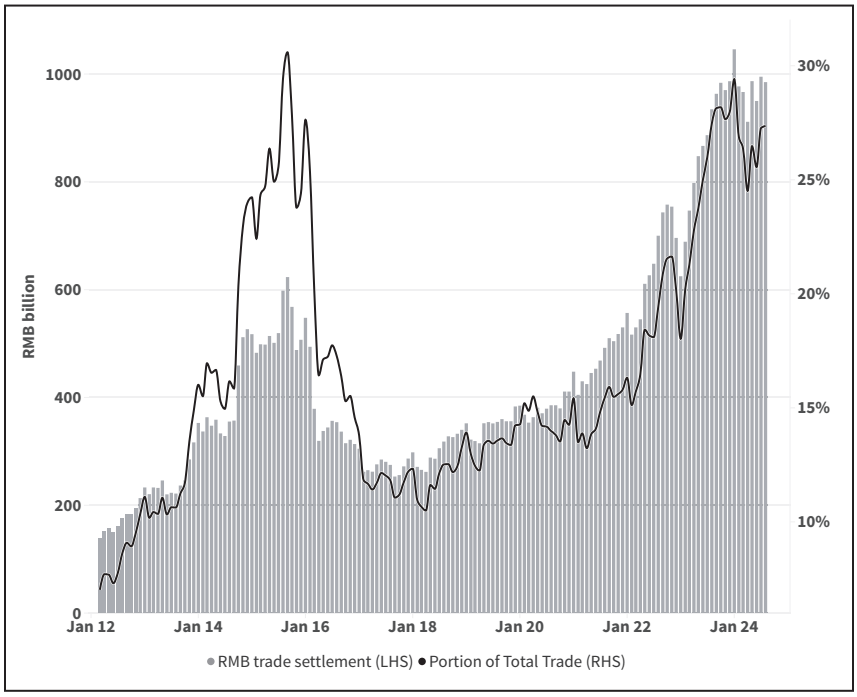
normal trading relationships. However, China would still be able to use the RMB to facilitate its most important trade, including in energy and raw materials.[161]

History of RMB Internationalization

China's interest in RMB internationalization began as an economic policy response to perceived weaknesses and limitations in the dollar-denominated international financial system. Chinese concerns about the impact of a volatile external financial environment on its economic growth date back to at least the 1997 Asian financial crisis.[162] The 2008 global financial crisis amplified these fears and catalyzed Chinese policymakers to begin pursuing RMB internationalization.[163] In the aftermath of the global financial crisis, Chinese policymakers lost confidence in the U.S. financial system and observed a reduction in available dollar liquidity.[164] The lack of adequate trade financing constrained China's recovery by limiting China's ability to export.[165] Chinese officials saw RMB internationalization as a way to avoid future disruptions to dollar-denominated trade transactions.[166] Chinese officials also believed an international RMB would improve China's ability to influence global monetary conditions to the benefit of Chinese businesses.[167]

Following Xi's rise to power in 2013, Chinese officials became increasingly focused on how RMB internationalization could enhance financial security. Just one year earlier, Chinese experts had observed how the United States utilized financial sanctions to remove Iran from the dollar-denominated financial system.[168] Xi viewed RMB internationalization as a way China's economy could build resilience against similar sanctions that could be imposed on the country in response to a crisis in Taiwan.[169] U.S. financial sanctions on Russia have amplified Chinese concerns.[170] U.S. willingness to use sanctions has led some Chinese scholars to argue that the security benefits of RMB internationalization may be more important than the economic advantages of an international RMB.[171]

Figure 2: Proportion of Chinese Goods Trade Denominated in RMB, Three-Month Rolling Average, Mar 2012–Aug 2024



Source: People's Bank of China, "*Total Cross-Border Merchandise Trade Settled in Yuan, Exports, Imports* [2012–2024]," via Haver Analytics, 2024.

Policy Support for RMB Internationalization

Chinese officials have supported RMB internationalization by implementing policies that encourage RMB trade settlement and investments in RMB-denominated assets. The internationalization process began in July 2009 with a set of trial measures enabling cross-border trade settlements between five mainland cities and certain enterprises in Hong Kong, Macau, and ASEAN member countries.*[172] China allowed the establishment of offshore RMB clearing banks in Hong Kong and Macau to carry out and clear RMB in cross-border trade transactions.[173] In the following years, the program expanded to new offshore RMB centers including Taiwan, Singapore, and London.†[174] To allow for offshore transactions while still maintaining its stringent capital controls, China split the RMB into two currencies. One was used in the onshore market in mainland China (CNY) and the other in the offshore market outside

*Shanghai City, Guangzhou City, Shenzhen City, Zhuhai City and Dongguan City were selected as the test area of mainland China. Sekine Eiichi, "Relationship Between the Renminbi Internationalization Strategy and the Digital Yuan, and the Future Outlook," *Policy Research Institute, Ministry of Finance, Japan, Public Policy Review* 20:.2, (March 2024), 5.

†The majority of offshore RMB-denominated transactions still take place in Hong Kong (83.3 percent), followed by the United Kingdom (4.4 percent), Singapore (2.9 percent), and the United States (2 percent). As a result, offshore RMB transactions that are used to avoid sanctions would likely flow via Hong Kong. *SWIFT*, "RMB Tracker," September 2024.

mainland China (CNH).[175] Policies supporting RMB internationalization focus on the offshore RMB.

Companies began to utilize the offshore RMB in transactions and corporate RMB bank deposits located in foreign financial centers grew rapidly from 2010 to 2015.*[176] Concurrently, China sought to develop a deep and liquid pool of high-quality offshore RMB assets to encourage foreign use of the RMB as a store of value.[177] China began encouraging the issuance of offshore RMB bonds—commonly referred to as "dim sum" bonds.[178] In October 2009, China's Ministry of Finance (MOF) became the first central government entity to issue a "dim sum" bond.†[179] The MOF issuance was soon followed by foreign firms including McDonald's, Volkswagen, and Caterpillar, and, in 2012, HSBC issued the first "dim sum" bond outside of Hong Kong.[180]

In September 2016, with the Obama Administration's support, China successfully lobbied the International Monetary Fund (IMF) to include the RMB in the Special Drawing Rights (SDR)‡ basket.§[181] The inclusion of the RMB in the SDR signaled that the IMF believed the RMB should be held as an international reserve asset.[182] Inclusion also meant the IMF considered the RMB—specifically the offshore RMB, as the onshore RMB was still subject to capital controls—as "freely usable" in international financial markets.[183] This designation helped alleviate foreign investors' concerns that China might restrict their RMB holdings, and growth in foreign holdings of RMB assets followed.[184]

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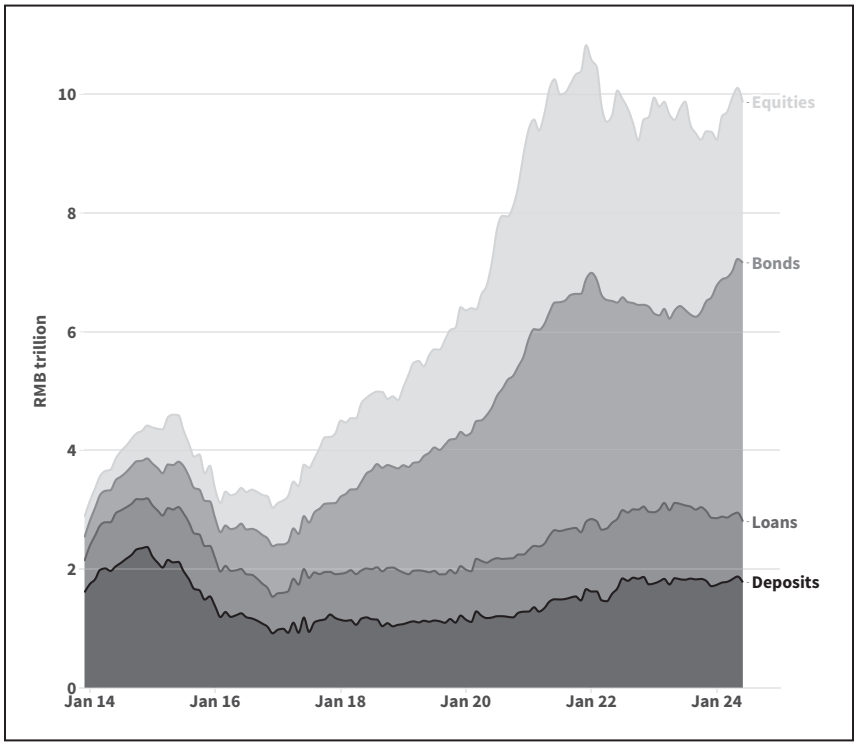
*In 2010 the IMF estimated there was around 100 billion RMB in offshore deposits. From December 2013, the first time the PBOC released complete data, to December 2014, the value of RMB deposits held outside of China rose from RMB 1.6 trillion to RMB 2.4 trillion. Malhar Nabar and Camilo E. Tovar, "Renminbi Internationalization," *International Monetary Fund*, January 14, 2017; People's Bank of China, "*China: Domestic RMB Finl Assets Held Abroad: Deposits* [2013–2015]," via Haver Analytics, 2024.

†While the first "dim sum" bond was issued in 2007 by the China Development Bank, the MOF issuance was particularly notable in the development of the overall market. Repeated MOF issuances helped establish a benchmark yield curve to facilitate pricing of "dim sum" bonds. Kevin Chow and Daniel Law, "Offshore Renminbi Dim Sum Bonds," *International Monetary Fund*, January 17, 2017.

‡The SDR is an interest-bearing international reserve asset maintained by the IMF that supplements sovereign reserves. Since the creation of the SDR, the IMF has allocated a total of SDR 660.7 billion ($935.7 billion) to its member countries. IMF members can hold SDRs as part of their foreign exchange reserves, exchange SDRs for freely usable currencies, or use SDRs in transactions with the IMF, such as paying interest or repaying loans. International Monetary Fund, "Special Drawing Rights (SDR);" International Monetary Fund, "Special Drawing Rights (SDRs) Allocations and Holdings for All Members as of September 30, 2024."

§In 2015, the Commission explicitly warned against inclusion of the RMB in the SDR basket writing, "Despite these limited steps forward, PBOC Governor Zhou Xiaochuan noted in April 2015 that the Chinese government will maintain control over cross-border financial transactions, external debt, short-term capital flows, and temporary capital control measures . . . The IMF's decision to include the RMB would legitimize China's managed convertibility approach." U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 157.

Figure 3: Overseas Holdings of RMB-Denominated Assets, Dec 2013–Jul 2024



Source: People's Bank of China, "*Domestic RMB Finl Assets Held Abroad: Deposits, Loans, Bonds, Equities* [2013–2024]," via Haver Analytics, 2024.

China must balance policies that improve access to RMB liquidity and enhance external willingness to use the currency with their impact on domestic economic stability and Party control over the financial system. Central to this tradeoff are China's robust domestic capital controls. The Party's ability to control capital flows has been essential to the country's financial security and RMB exchange rate stability.[185] However, capital controls also strongly deter foreign banks and businesses from holding and conducting transactions in RMB.[186] Capital controls prevent market participants from freely exchanging the currency and from fully participating in Chinese financial markets.* While Chinese capital controls do not completely prevent RMB transactions, they slow down or constrain these flows considerably and create risks for foreign firms that Chinese officials can tighten or halt them, trapping assets in China or altering their value independent of market forces.[187] This is a strong disincentive for foreign entities to transact in RMB.

*Chinese citizens are limited by a $50,000 per year quota on foreign exchange conversions. Corporations are also similarly limited by a series of restrictions on outbound investments and rules limiting access to foreign exchange. Bank of China, "Individual Foreign Exchange Purchasing;" Erin Ennis and Jake Laband, "China's Capital Controls Choke Cross-Border Payments," *U.S.-China Business Council*, February 8, 2017.

The success of Chinese efforts to internationalize the RMB has been mixed at best. Despite China representing 17 percent of global gross domestic product (GDP), the RMB currently accounts for a much smaller share of various measures of currency internationalization.[188] While it is unrealistic for the RMB to surpass the dollar as the dominant international currency, Western sanctions on Russia and continued Chinese efforts to increase the attractiveness of the RMB may help increase international use of the currency over the coming years.[189]

Table 2: Measures of Currency Internationalization

Role of Money	**Indicators**	**RMB**	**USD**
Use in Transactions	Share in international payments (2023)	3%	44.4%
	Share in trade finance markets (2023)	4.8%	84%
	Share in global FX transactions (2022)*	7%	88%
Store of Value	Share of global sovereign reserve allocation (2023)	2.5%	58.9%
	Share of international debt markets (2023)	0.7%	46.9%

Source: Various[190]

RMB Payment Infrastructure

China is developing an RMB payments network that can execute and conceal RMB-denominated transactions. An indigenous payments network is an essential counterpart to an international RMB. Without a payments infrastructure capable of functioning independent from the dominant, U.S.-led global financial system, Chinese firms will still face difficulties and delays in conducting RMB-denominated transactions in a sanctions scenario.

Banks rely on a clearing settlement institution as well as a electronic financial message system to effectively transfer funds across borders.[191] The Society for Worldwide Interbank Financial Telecommunication (SWIFT), headquartered in Belgium, is the dominant global payments messaging platform. SWIFT is not a bank and does not manage accounts or hold funds. SWIFT does not actually transfer money; it is a secure messaging platform banks use to send instructions with standardized codes and formats to banks in other countries.[192] Standardization simplifies translation and the need to confirm the identity of counterparties and customers.[193] Prior to SWIFT, a cross-border transaction often required the exchange of more than ten messages and labor-intensive authentication procedures.[194] The cost and efficiency gains offered by SWIFT mean it has completely displaced other systems.[195] Although there are no comprehensive estimates of its share of global payment messaging, SWIFT's largest competitors facilitated transactions worth less than half of a percent of SWIFT's volume.[196]

*Because FX transactions involve two currencies, the total percent share of all currencies adds to 200 percent.

SWIFT's ubiquitous role in cross-border transactions makes it an integral component of the enforcement of U.S. financial sanctions. SWIFT shares data with the United States to monitor global compliance with U.S. sanctions and secondary sanctions.* [197] The United States has used its leverage to exclude sanctioned entities from using SWIFT.[198] The United States has several ways to pressure SWIFT to comply with U.S. sanctions. A vote by SWIFT shareholders can compel it to take such action.[199] While U.S. banks do not make an outright majority, other banks, fearing secondary sanctions, may side with them. U.S. officials could also pressure the government of Belgium or the EU to enforce U.S. sanctions. Finally, the United States could structure its sanctions such that SWIFT would have to comply with them if they wanted to continue to do business with U.S. institutions.† [200]

Transactions coordinated via SWIFT still must be processed by a separate clearing settlement institution. Clearing settlement institutions act as intermediaries between transacting parties, ensuring that transactions are completed smoothly while minimizing risk.[201] U.S. and EU institutions also likely account for a majority of cross-border clearing settlement transactions. The Clearing House Interbank Payments System (CHIPS), based in the United States, facilitated $407 trillion of transactions in 2021.‡ [202] TARGET2, a European Central Bank-run payments system, facilitated about $520 trillion in transactions in 2020.[203] Both of these platforms are critical to global cross-border payments, though the presence of other clearing and settlement competitors mean they face more competition than SWIFT.[204]

China is actively building and promoting its own alternatives to SWIFT and Western clearing settlement institutions. Central to these efforts are the Cross-Border Interbank Payments System (CIPS) and its wholesale Central Bank Digital Currency (CBDC), which is still being developed. Both platforms could help the country facilitate and settle some domestic and cross-border RMB transactions, even in the face of a maximalist sanctions scenario.[205] Sanctions would still impose some adjustment costs as banks and their willing counterparties onboard onto the new system. The complexity and dominance of U.S. institutions in the global financial system also likely mean parts of China's alternative infrastructure may still rely on the United States for payments—and therefore remain open to disruptions.[206] Still, Chinese officials perceive both CIPS and its wholesale CBDC as central tools in their financial sanctions contingency plans and have tried to accelerate their development and adoption.[207]

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*SWIFT initially resisted sharing private transaction data with the United States. However, after the attacks of September 11, 2001, SWIFT allowed the United States access when Congress threatened to sanction the society itself. More recently, including after U.S. and/or EU sanctions on Iran in 2012, North Korea in 2017, and Russia in 2014 and 2022, SWIFT continues to comply with legislation or regulations to share information about transactions involving sanctioned persons or institutions. Marco Cipriani, Linda S. Goldberg, and Gabriele La Spada, "Financial Sanctions, SWIFT, and the Architecture of the International Payment System," *Journal of Economic Perspectives* Vol 32:1 (Winter 2023), 37–38, 46–48.

†In 2012, the United States threatened sanctions against SWIFT itself unless it removed sanctioned Iranian financial institutions from its system. SWIFT complied and removed the sanctioned entities. Liana Wong and Rebecca M. Nelson, "International Financial Messaging Systems," *Congressional Research Service* CRS R46843, July 19, 2021, 2.

‡CHIPS relies on the Fedwire Funds Service, the U.S. Federal Reserve's settlement platform, to facilitate it transactions. The Clearing House, "About CHIPS," Modern Treasury, "CHIPS."

Cross-Border Interbank Payments System (CIPS)

China developed CIPS as an alternative payment system designed to process RMB for cross-border transactions. Launched by the People's Bank of China (PBOC) in 2015 with the explicit goal of promoting RMB internationalization, CIPS integrates international RMB settlement into the existing global financial architecture, most notably through its interoperability with SWIFT.[208]

CIPS currently relies on SWIFT messaging capabilities for the vast majority of its transactions.[209] However, CIPS maintains its own messaging system for use by its direct participants. While CIPS's own messaging platform is interoperable with SWIFT through the use of the ISO 20022 international payments messaging standard, it is fully separated from any Western institution.[210] Therefore, if the Chinese banking system were excluded from SWIFT and U.S.-based payments clearing networks, China's financial institutions and their counterparties could rely on CIPS to communicate and settle payments.[211] CIPS's own messaging platform could also help protect Chinese transactions from secondary sanctions.

CIPS adoption has been rapidly growing and likely could manage and onboard China's global trading relationships in the event of U.S. sanctions. In Q4 2023, the system processed 35 trillion RMB ($4.9 trillion) worth of transactions—on average, $53.6 billion in transactions per day.[212] China's total imports and exports over the same period averaged around $16.2 billion per day.[213] CIPS usage continues to grow. Its Q4 2023 transaction total was 56.6 percent higher than in Q1 2022, when the United States imposed sanctions on Russia.[214] As of August 2024, CIPS reports having 152 direct participants and 1,412 indirect participants covering 117 countries and regions globally.[215]

Wholesale Central Bank Digital Currency (CBDC)

The Chinese government is developing a cross-border CBDC that could also be leveraged to bypass the U.S. payments system, offering additional sanctions resilience. Unlike China's domestic retail CBDC, commonly called the digital yuan, or e-CNY, which is used for person-to-person transactions, a wholesale CBDC is designed to be used exclusively among financial intermediaries to settle interbank transfers and similar wholesale transactions.[216] China is exploring a wholesale CBDC through a project named Multiple Central Bank Digital Currency (m-CBDC) Bridge, or Project mBridge.* China's wholesale CBDC development has key implications for U.S. national security. Like CIPS, transactions made with it are conducted outside of the current U.S. dollar and global payments infrastructure.[217] As a result, China's wholesale CBDC could eventually become an alternative cross-border settlement system for countries willing to work with China to evade U.S. sanctions. While China's wholesale CBDC

*The PBOC collaborated with the Bank for International Settlements (BIS) Innovation Hub, the Bank of Thailand, the Central Bank of the United Arab Emirates and the Hong Kong Monetary Authority on Project mBridge. Project mBridge aims to address inefficiencies in cross-border payments, including high costs, slow transaction speeds, the decline of correspondent banking, and operational complexities. In June 2024, Project mBridge reached the minimum viable product stage, enabling participants to conduct real-value transactions. Project mBridge members are now working with private sector firms to further develop the platform. Bank for International Settlements, "Project mBridge Reaches Minimum Viable Product Stage and Invites Further International Participation," June 5, 2024.

should mostly be viewed as an alternative platform to CIPS, it does provide some additional security to the Chinese financial system in a sanctions scenario. This is because China's wholesale CBDC relies on the PBOC to execute payments.[218] As a result, attempts by the United States to disrupt it would require sanctions or secondary sanctions directly on China's central bank.[219] This would likely be perceived by China and third countries as a major escalation and increases the risk of instability in the global financial system.[220]

RMB Internationalization across China's Trade Partners

China is actively promoting RMB-denominated trade through multilateral institutions and in bilateral partnerships.[221] In the first half of 2024, China was able to settle 26.6 percent of its total trade in RMB, up 12.6 percentage points from the first half of 2021.*[222] China has leveraged its influence over global commodity markets in particular to encourage commodity-exporting countries to use the RMB in their trade.[223] In a sanctions scenario, China hopes to rely on these countries to supply it with critical energy and commodity imports.[224]

Bilateral and Multilateral Currency Partnerships

China has proliferated local currency use partnerships among developing economies through multilateral organizations including the Shanghai Cooperation Organization (SCO),† BRICS,‡ and ASEAN+3.§ Chinese support for local currency partnerships accelerated following Western sanctions against Russia.[225] China has sought to capitalize on unease around Western sanctions among some members of these groups.[226] For example, during the September 2022 SCO Summit, Xi proposed accelerating the development and use of local-currency cross-border payments and settlement systems.[227] Iran has joined the SCO explicitly because of the organization's potential to help it circumvent U.S. sanctions.[228] China has also promoted local currency transactions across BRICS economies.[229] Among other efforts, BRICS is also exploring alternative payments systems such as the BRICS Pay system for retail payments and transactions across member countries.[230]

ASEAN+3 is particularly important as its members currently settle the largest volumes of RMB-denominated trade with China.[231] ASEAN+3 is researching and pursuing deals to streamline local currency settlement.[232] China has capitalized on this and has signed

*As of October 11, 2024, the PBOC has not released data for April and June of 2024. As a result, both the estimate for the first half of 2024 and the growth since 2021 exclude data for April and June. People's Bank of China, "*Total Cross-Border Merchandise Trade Settled in Yuan, Exports, Imports* [2012–2024]," via Haver Analytics, 2024.

†The SCO is an intergovernmental organization comprising Belarus, China, India, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan and Uzbekistan. It focuses on issues related to politics, economics, international security, and defense. *Astana Times*, "SCO Welcomes Belarus as Its 10th Member State," July 4, 2024; Shanghai Cooperation Organization, "General Information," January 9, 2017; Matthew Southerland, Will Green, and Sierra Janik, "The Shanghai Cooperation Organization: A Testbed for Chinese Power Projection," *U.S.-China Economic and Security Review Commission*, November 12, 2020.

‡BRICS is an intergovernmental organization comprising Brazil, Russia, India, China, and South Africa. Following an invitation in summer of 2023, as of January 2024, Egypt, Ethiopia, Iran, and the UAE have also joined. Saudi Arabia was also invited but they have yet to accept the invitation. *BBC*, "Brics: What is the Group and Which Countries Have Joined?" February 1, 2024.

§ASEAN+3 includes all Association of Southeast Asian Nations (ASEAN) members (Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Burma, Philippines, Singapore, Thailand, and Vietnam) as well as Japan, South Korea, and China.

local currency settlement agreements with Cambodia, Indonesia, Laos, Malaysia, Burma, Thailand, and Vietnam.*[233] Since 2009, China has also been ASEAN's largest trading partner.†[234] The extensive and longstanding economic connections between China and ASEAN have led to multiple cross-border uses of the RMB, including the recycling of RMB received in exchange for exports to pay for imports from China.[235] In 2021, the most recent year with available data, approximately 70 percent of the 5.8 trillion RMB China settled in trade was with Asian economies.[236]

China Targets Commodity Exporters for RMB-Denominated Trade

China is working to increase the influence of the RMB in global commodities markets by encouraging the commodities it trades to be priced in and exchanged using RMB. Efforts to increase the use of the RMB in global commodities markets synergize with Chinese efforts at the SCO and BRICS. Zoe Liu, senior fellow at the Council on Foreign Relations, points out SCO and BRICS members include some of the world's largest hydrocarbon and minerals exporters.[237] Four of the ten largest oil producers and seven of the ten largest iron producers are members of the SCO and/or BRICS.‡§

China has leveraged its position as the world's largest oil importer and a critical node in the supply chains of key minerals to encourage commodity trade in RMB.[238] As a key buyer, China can more easily seek to impose RMB payment requirements on its imports from foreign companies.[239] Countries that are significant exporters to China, primarily in raw materials or commodities, tend to denominate more trade in RMB.[240] For example, in 2021, major commodity exporters including Argentina, Algeria, Brazil, Chile, Indonesia, Kazakhstan, and Nigeria used the RMB for a significant portion of their trade with China.[241] The portion of China's commodity trade denominated in RMB continues to grow. In 2022, cross-border RMB settlement for major commodities amounted to 985.73 billion RMB ($140 billion). In the first nine months of 2023, it grew to 1.5 trillion RMB ($210 billion).[242]

To enhance the RMB's use and pricing power in global commodities markets, China is developing new trading platforms and financial instruments. In 2018, China launched RMB-denominated oil futures and, in 2020, copper futures on the Shanghai International Energy Exchange.[243] Shanghai crude oil futures are now the world's third-largest crude oil futures after the WTI Crude and Brent Crude futures.[244] China also launched the Ganzhou Rare Metal Exchange in 2019, to capitalize on its dominant role in supply chains to quote RMB prices for spot trading of rare earths and critical minerals that are essential to the clean energy transition.[245] As of 2023, there

*Vietnam's arrangement only applies to towns on its border with China. *Nikkei Asia*, "Vietnam to let Traders Use Yuan Along China Border," August 29, 2018.

†In 2020, ASEAN became China's largest trading partner. Arendse Huld, "China-ASEAN Trade and Investment Relations," *Dezan Shira & Associates*, August 9, 2024.

‡Oil producers include Russia (third largest), Brazil (seventh largest), the UAE (eighth largest), and Iran (ninth largest). BRICS has also invited the world's second-largest oil exporter, Saudi Arabia, to join—although it has not yet joined. U.S. Energy Information Administration, "What countries are the top producers and consumers of oil?" April 11, 2024; *Reuters,* "Saudi Arabia Has Not Yet Joined BRICS - Saudi Official Source," February 1, 2024.

§Iron producers include Brazil (second largest), China (third largest), India (fourth largest), Russia, (fifth largest), Iran (sixth largest), South Africa (eighth largest), and Kazakhstan (ninth largest). U.S. Geological Survey, "Iron Ore Statistics and Information," 2024.

are 23 varieties of international standardized futures and options commodity products listed in China and denominated in RMB.[246]

Chinese officials are encouraging their foreign partners to utilize RMB trading and settlement systems. In a 2022 address to the China-Gulf Cooperation Council, Xi emphasized the need for increased use of the RMB in oil and natural gas trading and settlement through the Shanghai Petroleum and Natural Gas Exchange over the next three to five years.[247]

Still, RMB usage remains significantly behind the U.S. dollar in global commodity markets. Volumes traded on the Shanghai and Ganzhou exchanges trail the preeminent commodity pricing centers of New York, Chicago, and London, and the U.S. dollar still denominates around 90 percent of major commodities trade in global markets.[248] Substantial adoption of the RMB would not make commodity exporters immune from dollar sanctions. Most countries would still rely on the dollar for transactions not involving China.

Sanctioning China in a Crisis Scenario

The United States and its allies have three broad avenues through which they can impose economic sanctions targeting China's financial system. They can implement full blocking sanctions which would prohibit any transactions between U.S. individuals and companies and Chinese entities.[249] Importantly, this approach would include key parts of the global payments infrastructure, including clearing and settlement institutions and correspondent bank networks, which are formal agreements or relationships between banks to provide cross-border payments services for each other. Full blocking sanctions would not only prevent transactions between China and the United States but also disrupt transactions between China and other countries that rely on U.S. payments infrastructure. The United States can also impose sovereign debt restrictions that would block debt issued by the Chinese government, central bank, national wealth fund, and companies from U.S. markets. Finally, the United States could compel SWIFT to impose a ban on Chinese institutions. This would prohibit the provision of the SWIFT financial messaging service to sanctioned Chinese entities. Full blocking sanctions and a SWIFT ban would have the biggest impact on the Chinese economy.*[250]

The disruptions to global supply chains caused by completely cutting off the world's largest exporter from access to U.S. dollar financing, however, would likely generate political opposition in the United States and globally.† A 2024 analysis from Rhodium

*In addition to these options, the United States could freeze a large share of China's $3.22 trillion in foreign exchange reserves. However, a 2024 study from Rhodium Group and the Atlantic Council argues this would neither be credible nor desirable for the United States. The primary effect would be to limit China's capacity to defend its currency. Without Chinese support the RMB would experience a sharp depreciation and make China's exports more competitive in global markets. Logan Wright et al., "Retaliation and Resilience Chinese Economic Statecraft in a Taiwan Crisis," *Atlantic Council*, April 1, 2024, 33.

†U.S. and allied sanctions against Russia demonstrate how political resistance in both the sanction imposing countries and other global economies can block certain actions. While sanctions aim to cause the most disruption to the targeted country, they may have unintended side effects. For example, the United States and EU scaled back plans to ban the provision of financial services to companies transporting Russian oil for fear that fully crippling Russian oil exports would cause a surge in the global price of oil and a global recession. Lutz Kilian and David

Sanctioning China in a Crisis Scenario—*Continued*

Group and the Atlantic Council suggests that as a result, China believes complete restrictions on the country's financing channels are implausible.[251] While the United States would sanction some institutions, China could respond by reallocating critical trade and financial transactions with willing partners through very large or very small financial institutions.[252] China can designate a series of small, structurally insignificant financial institutions to conduct its trade, knowing they will be sanctioned. China's use of the Bank of Kunlun to circumvent U.S. sanctions on Iran illustrate this. China designated this small, state-owned bank to continue to finance payments to Iran using the RMB. China's use of the Bank of Kunlun ensured it could continue to trade with the sanctioned country without risking the impact of U.S. sanctions on more important actors in its financial sector.*[253] Alternatively, China could look to its largest financial institutions. Chinese officials may be calculating that the possibility of substantial disruptions in permitted trade and dislocations in global supply chains could be threatening enough to deter the imposition of sanctions and secondary sanctions.[254]

China could also rely on its alternative payments infrastructure to circumvent financial sanctions or secondary sanctions that are designed to prevent non-U.S. entities from transacting with countries subject to U.S. sanctions.[255] China could route energy imports and source critical commodities and components via countries that are unlikely to cooperate with U.S. sanctions. To do so, they would use the RMB as a payment currency.[256] Dr. Liu argues this could require minimal adjustment time.[257] Many commodity exporters to China already receive some RMB for their current transactions.[258] Still, sanctions—including freezing China's official dollar reserves—would make dollars in China scarce, driving down the value of the RMB exchange rate. A weaker exchange rate would make goods imports into China more expensive, distort China's export trade, and generate substantial financial stress for Chinese companies operating in global markets.[259] Secondary sanctions would still cause disruptions to Chinese trade, but, because these would be perceived by third countries as a significant escalation by the G7, the United States would face broader constraints on such sanctions.[260]

In both scenarios, the limiting factor jeopardizing China's ability to evade sanctions will not be its financial infrastructure—China can always admit new institutions into CIPS or, once live, central banks into its wholesale CBDC. The functionality of these networks will be restricted by the willingness of third countries to use them. Authors of the Rhodium Group and Atlantic Council study suggest the imposition of U.S. sanctions would likely intensify fears around the liquidity and attractiveness of RMB financial assets and raise the specter of the tightening of capital

Rapson, "How Global Oil Sanctions Lowered Russian Oil Export Prices," *Dallas Fed Economics*, May 14, 2024.

* For more examples of China's sanctions evasion approach see Chapter 5, "China and the Middle East."

Sanctioning China in a Crisis Scenario—*Continued*

controls.[261] This risk could likely deter many countries from continuing economic engagement with China.

Access to the dollar still matters far more than the RMB for the vast majority of China's trading partners. For example, Dr. Liu points out that China's global commodity suppliers depend on the dollar-based system to price and trade their commodity exports.[262] Their banks, as well as most of China's other trading partners, remain reliant on SWIFT and CHIPS for their domestic banking system as well as their international payments settlements. The few countries that are willing to risk the impact of U.S. sanctions and secondary sanctions on their economy, namely Russia, Iran, and North Korea, cannot fully provide China with the substantive material support needed to mitigate U.S. financial sanctions.[263]

Party-State Enhances Political Control over Institutions and Society

Although CCP leaders' language suggests they feel the risks they face are escalating, their actions in the political realm do not yet clearly indicate they are preparing for an imminent war. Official rhetoric aimed at Taiwan and the United States has become considerably more negative and intense, but it has not taken on the escalatory tone that preceded China's conflicts with its neighbors in past decades, and it appears—for now—to be leaving the door open for dialogue and delay. That said, observers of China should not rely wholly on indicators from past conflicts, as China's political environment and culture has evolved and official rhetoric is unlikely to exactly match that seen in the Mao era. What is evident, however, is that the Party-state has accelerated efforts to deepen its control over the political system and daily life.[264] These include measures to build out the national security apparatus under CCP control, revive Maoist-era methods of mobilizing the public, coerce industry into heeding government directives, and deter Chinese citizens from engaging with foreign individuals. These efforts undoubtedly assist General Secretary Xi in his ongoing consolidation of power over China but also create a system that is more agile in the face of external threats and useful for sustaining a military conflict.[265]

CCP Rhetoric Intensifies but Falls Short of What Experts Expect in Wartime

China's rhetoric toward the United States and Taiwan appears to have intensified, although it has not yet taken on the harsh tone and phrasing that preceded China's prior conflicts and does not foreclose the possibility of communication. In their testimony to the Commission, both Mr. Kewalramani and Timothy Heath, senior international defense researcher at the RAND Corporation, stated they would expect to see top Chinese leaders demonize the United States and Taiwan and assert that all peaceful means of resolving the dispute had been exhausted if China were imminently preparing for conflict.[266] During the 1950s and 1960s, Mao directly exco-

riated the United States in the harshest terms and called for mass sacrifice amid his country's proxy conflict with the United States in Korea.[267] Prior to the Sino-Indian border war in the 1960s and China's attack on Vietnam in 1979, Chinese leaders and state media steadily escalated rhetorical attacks on their enemies, transitioning from threats to declarations that they would punish them or teach them a lesson.[268]

The CCP's rhetoric today exhibits some of these escalatory aspects but not others. For example, CCP officials have arguably already demonized Taiwan President Lai Ching-te, as when Foreign Minister and Director of the Central Committee's Foreign Affairs Commission Wang Yi called him a traitor to the nation and his ancestors and warned that all "'Taiwan independence' separatists" would be "nailed to the pillar of shame in history."[269] At the same time, senior Chinese leaders are typically oblique in their condemnations of the United States, with Xi mostly opting to refer indirectly to "certain countries" or "Western countries" when discussing threats of containment.*[270] There are some Chinese state media-sponsored "documentaries" that paint the United States as a warmonger and a handful of recent films that depict conflict between the United States and China, but as Dr. Heath points out, there is far less media demonizing the United States than was the case in Maoist times.[271] Most importantly, the CCP continues to signal an openness to dialogue with the opposition party in Taiwan and to emphasize that Taiwan separatists are only a tiny minority of the population.[272] In these respects, the CCP's contemporary rhetoric is clearly milder than that it employed in the runup to clashes with India in the 1960s and Vietnam in the 1970s.

Building Out the National Security Apparatus under Party Control

The CCP has taken steps to expand the power and refine the workings of its national security apparatus, framing these measures as elements of a "new security pattern."[273] These include creating a commission to coordinate national security policy, increasing the number of personnel with security experience in high-ranking positions, passing a raft of new laws relating to national security, and tightening the vise on Party cadres perceived as undisciplined or corrupt.

Xi-Led Commission Centralizes National Security Policy

A critical institution in the CCP's national security apparatus is the Central National Security Commission (CNSC), which now plays a prominent role in coordinating national security decision-making.†[274] The CNSC is a CCP Central Committee body mandated to

*A notable exception was Xi's choice to explicitly name the United States during his comments at the "two sessions" in March 2023. Chun Han Wong, "China's Xi Jinping Takes Rare Direct Aim at U.S. in Speech," *Wall Street Journal*, March 6, 2023.

†Xi presided over the creation of the CNSC in 2014 by elevating the previously ad hoc Central National Security Leading Small Group to the status of a permanent commission, thereby granting it a permanent staff office, a regular membership, and a position of greater influence within the bureaucracy. He officially heads the CNSC. For more on the creation of the CNSC and its role in decision-making, see U.S.-China Economic and Security Review Commission, Chapter 1, "CCP Decision-Making and Xi Jinping's Centralization of Authority," in *2022 Annual Report to Congress*, November 2022, 38, 40–42, 61–62, 80; *Communist Party Members Net*, "Xi Jinping: Persist in the Comprehensive National Security Concept, Walk the Path of National Security with

examine all foreign and domestic issues through the lens of national security, effectively giving it the power to determine who or what constitutes a threat to national security.[275] National security commissions have also been established at all levels of the Party-state system, from provincial down to township and district levels, to carry out various research, national security law enforcement, and education functions.[276] Although the workings of the CNSC are highly secretive, Sheena Chestnut Greitens, an associate professor at the University of Texas at Austin, observes that the CNSC focuses on both domestic security and foreign policy issues.[277] The March 2023 meeting of the CNSC, which was presided over by Xi and attended by top security officials, offered a glimpse of the high-level national security discourse and decisions at such meetings.[278] According to Xinhua's readout of the meeting, officials assessed that national security problems facing China had "increased dramatically," stressed that they "must be prepared for worst-case and extreme scenarios," and stated that "more efforts must be made to modernize our national security system and capacity, and get prepared for actual combat and dealing with practical problems."[279] The meeting also reportedly approved new guidelines for "nationwide security risk monitoring and early warning system" and public education on national security.[280] In an April 2024 article in the Party's main theoretical journal *Qiushi*, Ministry of State Security (MSS) Secretary Chen Yixin credited the CNSC with establishing a "centralized, unified, and highly authoritative national security leadership system."[281]

Personnel Appointments Reflect Growing Importance of Security Experience

Recent trends in leadership appointment suggest that experience with "national security" issues, broadly defined, is increasingly important among China's leadership. Multiple analysts have suggested that the composition of the senior Party-state leadership with experience in national security has recently risen, especially since the most recent 20th Party Congress in October 2022 and 14th National People's Congress in March 2023. For example, Guoguang Wu, senior research scholar at the Stanford Center on China's Economy and Institutions, observed in November 2022 that at least ten of the 15 new leaders who joined the Politburo and Central Secretariat at the 20th Party Congress could be described as having a national security background.*[282] According to an analysis from the Brookings Institution in March 2023, the makeup of the newly appointed State Council "reflects the renewed focus on state security and sociopolitical stability," with half of its members possessing a securi-

Chinese Characteristics" (习近平：坚持总体国家安全观 走中国特色国家安全道路), April 15, 2024. Translation; Matthew D. Johnson, "Safeguarding Socialism: the Origins, Evolution and Expansion of China's Total Security Paradigm," *Sinopsis*, November 6, 2020; *People's Daily*, "CCP Central Committee Politburo Holds a Meeting, Studies and Decides on Setting Up the Central National Security Commission, Considers and Reviews the Situation Report on the Implementation of the Eight Regulations" (中共中央政治局召开会议 研究决定中央国家安全委员会设置 审议贯彻执行中央八项规定情况报告), *Chinese Communist Party News Network*, January 25, 2014. Translation.

*He defined having a national security background as belonging to one of four categories: individuals with past experience and current responsibilities in the security sector of the Party-state; military leaders; individuals with a background in the military industrial sector; and individuals who in their tenure have advanced Xi's agenda for either aggressive "warrior wolf" diplomacy internationally or domestic repression in the name of "stability." Guoguang Wu, "The China Challenge: New Leadership Focuses on the Struggle for Security," *Discourse*, November 15, 2022.

ty or military background.*[283] Dr. Greitens assessed in November 2023 that all other members of the Politburo Standing Committee have at least some experience with nonmilitary security policy, with that experience being quite extensive for some.†[284] She also argued that some noteworthy appointments under Xi have "hybrid careers within the internal security apparatus," with experience spanning policing, intelligence, and Party discipline.‡[285] In her testimony for the Commission, Katja Drinhausen, head of the politics and society program at the Mercator Institute for China Studies, also assessed that there is a rise in officials with a security background, "mostly in domestic security, but also focusing on technological security and the economy."[286]

Updated Legal Canon Underpins the National Security Apparatus

The CCP has codified its expansive notion of national security through a series of laws over the past decade, constituting what one Chinese official termed a "legal Great Wall to safeguard national security."[287] These include the 2015 National Security Law and its 2020 counterpart for Hong Kong as well as additional laws on counterespionage, counterterrorism, anti-foreign sanctions, access of foreign investments, managing foreign nongovernmental organizations (NGOs), intelligence, and "state secrets." They also include laws on cybersecurity, data security, transportation security, and biosecurity as well as more political topics such as protecting "heroes and martyrs" from defamation.[288] Notably, many of the laws criminalize the disclosure of information the CCP deems sensitive on national security grounds to foreigners, and they obligate Chinese citizens to contribute to the authorities' national security activities. One 2023 commentary in the *People's Daily* offers statistics measuring this purported legal progress, claiming that since 2015, 20 pieces of specialized national security legislation and 110 other laws and regulations containing national security clauses had been promulgated, formulated, or revised.[289] Ms. Drinhausen assesses that China now has a "very well-established legal canon" and that some of these

*The authors note that most of the members also possesses "extensive provincial-level economic leadership experience," suggesting that a security background is not likely the only consideration. They also point out that economic issues are firmly intertwined with concerns about social stability, making even economic experience potentially germane to Xi's broadly defined concept of national security. Cheng Li and Mallie Preytherch, "China's New State Council: What Analysts Might Have Missed," *Brookings Institution*, March 7, 2023.

†Zhao Leji is vice chairman of the Central National Security Commission (CNSC) and former chair of the Central Commission on Discipline Inspection (CCDI). Ding Xuexiang previously served as the head of the CNSC office and as a secretary of Shanghai's Political-Legal Committee. Cai Qi was previous director of the CNSC office, and he may oversee the Central Guards Bureau, which provides security for China's top leadership. Li Xi is the current chair of the CCDI. Li Qiang previously served as the secretary of Zhejiang's Political-Legal Committee and oversaw the CCP's lockdown policies while he was general secretary of Shanghai. Wang Huning reportedly sits on the CNSC and is thought to have previously chaired a leading small group on internet security. Sheena Chestnut Greitens, "New Leaders in 'National' Security After China's 20th Party Congress," *China Leadership Monitor*, November 30, 2023.

‡An example is Chen Wenqing, a new member on the Politburo who is also secretary of the Central Secretariat, secretary of the Central Political-Legal Affairs Commission, and chief police inspector. His past experience includes leadership or service at the Ministry of State Security, at the office of the Central National Security Commission, for the Central Committee on Discipline Inspection, in the procuratorate, in Party discipline, and as a PLA commissar. Chen Wenqing is also the first former minister of state security to serve on the Politburo. Sheena Chestnut Greitens, "New Leaders in 'National' Security After China's 20th Party Congress," *China Leadership Monitor*, November 30, 2023; *Xinhua*, "CCP 20th Central Leadership Structure Member Resumes: Resume of Comrade Chen Wenqing" (中共二十届中央领导机构成员简历：陈文清同志简历), October 23, 2022. Translation; *South China Morning Post*, "China's Power Players: 20th Politburo."

laws have shifted what are considered national security-related offenses under Chinese law in ways that affect Chinese citizens and foreigners alike.[290]

Recent revisions to the Counterespionage Law in 2023 and State Secrets Law in 2024 in particular have elicited international concern due to their expansive scope and the possibility they could be invoked to prosecute foreign companies and personnel carrying out normal business activities in the Mainland.*[291] Revisions to both laws added Xi's broad definition of national security into the text by invoking the Comprehensive National Security Concept, raising uncertainty in terms of the issues to which their relevant legal authorities will be applied.[292] The revision of the Counterespionage Law simultaneously expanded the definition of "espionage" to include certain efforts to obtain "items related to national security" where it had previously mentioned only "state secrets" and "intelligence."[293] Additionally, it added conditions for the imposition of exit bans on individuals of any nationality should they be "suspected of acts of espionage" under the expanded definition.†[294] The revised State Secrets Law added a new reference to a category of information known as "work secrets," information that does not qualify as state secrets but would cause an adverse effect if leaked.‡[295] Legal observers have noted that what constitutes a "work secret" subject to protection remains unclear under the law and thus vulnerable to expansive, inconsistent, or arbitrary enforcement.[296] For example, it could potentially be interpreted to include information obtained through conventional research and due diligence efforts or investigative journalism.[297]

Crackdowns on Ideological "Laxity," Lack of Political Discipline, and Corruption within the Party

Xi has led a continuing effort to tighten political control and crack down on perceived problems with ideology, discipline, and corruption in an effort to make the Party-state more efficient and responsive to leadership directives.§ The CCP under Xi has sought to increase ideological conformity through a combination of regulatory changes, education campaigns, and grassroots measures. The Party has sought to strengthen the connectivity between the Party center and the grassroots levels through more frequent events and mandatory use of a smartphone app focused on ideological indoctrination.[298] It has also emphasized the importance of Party-wide education cam-

*In 2023, China's state security authorities raided the offices of the international advisory firm Capvision, questioned employees of the consulting firm Bain & Company, and detained five employees of the due diligence firm Mintz Group. Ryan McMorrow and Demetri Sevastopulo, "China Raids Multiple Offices of International Consultancy Capvision," *Financial Times*, May 8, 2023.

†For more on China's Counterespionage Law, see U.S.-China Economic and Security Review Commission, Chapter 1, Section 2, "U.S. China Security and Foreign Affairs," in *2023 Annual Report to Congress*, November 2023, 116.

‡Separately, the revised law includes new provisions requiring increased publicity and education, including through mass media, in order to enhance awareness on secrecy issues within society writ large. These are added despite the general public not having access to state secrets or classified information. Jeremy Daum, "Open Thoughts on the Secrets Law," *China Law Translate*, February 27, 2024; *China Law Translate*, "PRC Law on the Protection of State Secrets," February 27, 2024.

§According to a document known as a "historical resolution," whose production Xi directed ahead of the 20th Party Congress, a serious lack of political conviction, rampant corruption, and lax implementation of Party policies have presented serious challenges for both maintaining the image of the Party and adopting the policy approaches China needs to succeed. U.S.-China Economic and Security Review Commission, *2022 Annual Report to Congress*, November 2022, 30–31.

paigns as a necessary tool for guiding Party members and cadres.[299] For example, in 2023 Xinhua pointed to the CCP's 2012–2013 campaign on the "mass line" and cleaning up "undesirable work styles," a 2015 campaign on strict self-discipline, a 2016 campaign on studying Party documents and Xi's major policies, a 2019 campaign on the Party's "founding mission," and a 2021 campaign on Party history as important efforts to educate cadres in light of "complex circumstances facing the Party both at home and abroad."[300] Under Xi's leadership, the CCP has additionally issued three revisions of its "Regulations on Disciplinary Actions of the Chinese Communist Party" in 2015, 2018, and 2023, strengthening the documents' emphasis on ideological conformity, organizational discipline, and implementation of Party policies.[301] During Xi's tenure, the Party has also released multiple versions of its "National Cadre Education and Training Plan," the most recent of which in 2023 laid out extensive new requirements for ideological study among CCP officials and aimed to improve cadres' "political judgment."[302] In 2023, Xi warned that Party members and cadres had become complacent after a long period of relatively peaceful conditions, creating a risk that future struggles will cause them to "panic and lose their confidence easily."[303] Shortly thereafter, the Central Commission on Discipline Inspection (CCDI) launched a major campaign against the phenomenon of officials "lying flat" or doing only the bare minimum in their obligations.[304]

Throughout his tenure, Xi has made expansive use of his signature politically motivated anticorruption campaign in an attempt to bolster the legitimacy of the Party, curb undesirable behavior, and solidify his personal power.*[305] Now in its 12th year, the campaign shows no signs of abating but rather continues to expand. According to numbers released from the CCDI in January of 2024, about 110,000 CCP officials faced disciplinary action as part of the campaign in 2023 alone.[306] At an address to the third plenary session of the CCDI in January 2024, Xi reportedly stressed that "in the continued grave and complex situation, there is no possibility of stopping, slackening or compromising the anti-corruption campaign."[307] (For more on Xi's speech at the CCDI plenary session, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).") According to one tally, more than 30 Chinese state regulators, bankers, and senior financial executives had been detained for corruption-related charges between the start of 2024 and mid-May.[308] Over just two days in mid-July, the CCDI announced new investigations into a former deputy director at China's Ministry of Emergency Management, two leading officials from separate railway state-owned enterprises (SOEs), and a Party committee secretary at a vocational college.[309] Senior PLA officers have also been targeted by the wide-ranging campaign.[310] (For more on the anticorruption campaign and punishment of PLA officers, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).")

*While the Party does view the misuse of state resources as a threat to its legitimacy, its anti-corruption campaigns should be understood primarily as tools to ensure loyalty and political control. These objectives are evident in revised regulations on disciplinary actions released in 2024, as well as Xi's increased promotion of the concept of "self-revolution," a Maoist phrase urging the Party to continuously monitor and control itself. For more on the ongoing anti-corruption campaign, see Chapter 2: "U.S.-China Security and Foreign Affairs (Year in Review)."

Revival of Maoist Tools for Mass Mobilization

The CCP is currently reviving Maoist approaches to mobilizing the public to assist it with detecting and eliminating perceived security threats. This has been partially evident in Chinese officials' public statements; Party leaders have explicitly referred to the Mao-era "mass line" method of bringing the Party closer to the people in security matters, invoked historical events such as the "Fengqiao experience"* and "Chaoyang masses"† to encourage the revival of an informant culture, and called for mobilizing all of society to "wage the people's war" to maintain national security.[311] But more concrete examples include the CCP's cooptation of the public for surveillance and law enforcement activities as well as its renewed emphasis on mass education campaigns designed to boost patriotism and national security awareness.

Coopting the Public for Surveillance and Law Enforcement

The Party is recruiting local community members to help supplement its law enforcement efforts as well as maintain political and social control. In March 2023, China's Ministry of Public Security issued a three-year action plan for strengthening the work of police stations.[312] The plan calls for cultivating grassroots law enforcement personnel who "love their jobs, perform their duties loyally, and are trusted by the people," as well as creating more "Fengqiao-style police stations," which help the Party maintain social and political stability.‡[313] In November 2023, *Radio Free Asia* reported

*Named after the Fengqiao Township in Zhejiang, the "Fengqiao experience" is an approach of social and political governance promoted by Mao Zedong in the 1960s, which involved mobilizing local people to target "reactionar[ies]" and "class enemies." Xi endorsed the system nearly a decade prior to becoming paramount leader, reportedly stating during a 2003 visit to the town as Party Secretary of Zhejiang that the 'Fengqiao experience' was not outdated. As paramount leader, Xi called for the upholding and development of this system as early as 2013. Under Xi, the system has been adapted to co-opt citizens to assist the Party in governing them to help achieve its objectives. One example that can illustrate the contemporary conception of the "Fengqiao experience" is the Cyberspace Administration of China's creation of a hotline in April 2021 that encourages members of the public to report others online who criticize the CCP and its history. Manoj Kewalramani, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*. June 13, 2024, 17–18; Vivian Wang, "Xi Jinping's Recipe for Total Control: An Army of Eyes and Ears," *New York Times*, May 25 2024; *Zhejiang Daily*, "Draw a More Beautiful New 'Feng' Scene" (绘出更美新 "枫" 景), November 29, 2023. Translation; China Media Project, "Fengqiao Experience," April 16, 2021.

†The term "Chaoyang Masses" is a related concept that focuses on using community mobilization to assist the Party in security and governance. It originally referred to a network of volunteers and public informants from the Chaoyang district in Beijing, but over time, the term gradually became synonymous with forms of mass mobilization for political objectives of the CCP. During a 2017 tour in Beijing, for instance, Xi praised groups such as the "Chaoyang Masses" and "Xicheng Aunties," stating that the "cities of the people should be built and managed by the people… where there are more red armbands, there is greater safety and greater peace of mind." The concept's revival can be understood as the citizen-informant culture that has been developed under Xi. Manoj Kewalramani, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 13, 2024, 18–19; Stella Chen, "Chaoyang Masses," *China Media Project*, November 1, 2021.

‡Since 2019, there have been three batches of "Fengqiao-style police stations" that have been established across the country. The stations were created to help carry out the "mass line" concept, whereby the Party organizes citizens to help achieve its governance objectives, including public security. Qi Zongzhu, "The List of the Third Batch of 100 'Fengqiao-Style Police Stations' in China Was Announced, and Shengli Road Police Station Was on the List" (全国第三批100个 "枫桥式公安派出所" 名单公布 胜利路派出所榜上有名), *Xihai Metropolis Daily*, November 26, 2023. Translation; Wang Lei and Gu Yanwen, "The Second Batch of 100 'Fengqiao-Style Police Stations' in China Was Announced, and Liyang Zhuji Police Station Won the Honor" (全国第二批百个 "枫桥式公安派出所" 公布 溧阳竹箦派出所获殊荣), *Changzhou Evening News*, May 18, 2022. Translation; *People's Public Security News*, "The Ministry of Public Security Made a Decision to Name the

that as part of this effort, police stations around the country were laying off auxiliary police officers in order to save and consolidate local resources and instead outsourcing the daily work of auxiliary police officers to neighborhood officials and local militias under the "grid management"* system.[314] Although China has mobilized local residents en masse for law enforcement activities before, the new plan seeks to make this mobilization permanent, granting local officials law enforcement powers to recruit "grid officers."[315] For instance, in the city of Heshan, located in Guangdong Province, one recruitment ad posted on the city government's website said that grid workers primarily serve as "information collectors, policy propagandists, liaison [officers] for social situations and public opinion, conflict and dispute mediators," and other roles.[316] These workers are also tasked with reporting social issues, damage to public facilities, and details on other illegal and criminal activities, such as theft or robbery.[317] According to an analysis examining 88 online job postings from 2019 to 2020 by Jean Christopher Mittelstaedt, a departmental lecturer in modern Chinese studies at the University of Oxford, political requirements are "highly important for aspiring grid members," as 47 recruitment notices mentioned a political or ideological requirement.[318]

So-called "vigilante groups" are also helping aid neighborhood law enforcement efforts and assist the Party in maintaining control over local communities. According to Jessica Batke, the senior editor for investigations at ChinaFile, Party-organized vigilante groups function "yet another layer—in addition to the police, grid workers, facial-recognition cameras, and online monitoring and censorship—of the PRC's surveillance regime."[319] Vigilantes appear to be distinguished from grid workers as civilian volunteers, although these volunteers do receive some forms of compensation.†[320] Grid members are employees that are part of a political and administrative hierarchy, bound to it through a contract system.[321] Although grid workers are neither public servants nor attached to a work unit, they are assessed in the same way as civil servants.[322] Vigilante volunteers, in contrast to what their name suggests, are individuals deemed trustworthy by authorities, working under the direction of local police forces and the Party-state.[323] Students, retirees, middle-aged workers, local cadres, Party members, and veterans, among other demographics, serve as vigilantes.[324] Vigilantes bolster local

First 100 'Fengqiao Public Security Police Stations'" (公安部作出决定 命名首批100个"枫桥式公安派出所"), November 29, 2019. Translation.

*According to Minxin Pei, a professor of government at Claremont McKenna College, the CCP embraced grid management in the mid-2000s as a tool of social control. Dr. Pei asserts that grid management entails dividing communities into small units (typically 1,000 residents per unit) and equipping them with information and surveillance technology. Dr. Pei asserts that although on paper China has largely finished setting up more than one million grids in local communities, it will likely take years to complete such a system, with only wealthy cities seeming to have made genuine progress in the development of grid management. He argues that most grids are merely neighborhood committees that have been relabeled. Minxin Pei, "Grid Management: China's Latest Institutional Tool of Social Control," *China Leadership Monitor*, March 1, 2021, 1.

†Prospective vigilantes have been incentivized to participate by authorities through perks and sometimes cash rewards. For instance, one safety promotion association in Shenzhen's Bao'an district handed out cash to people who could catch suspects. Furthermore, some volunteers may receive discounts at hotels and stores. Ms. Batke also notes that around the 70th anniversary of the founding of the People's Republic of China in 2019, one Guangdong-based vigilante group sought to organize 300 people from different villages to assist the police with guard duty, paying each around $21 to $25 per day. Jessica Batke, "The Police's Strength Is Limited, but the People's Strength Is Boundless," *ChinaFile*, June 17, 2024.

law enforcement efforts by taking on patrol duties and handling low-level incidents in lieu of the police.[325] Vigilantes are also used for Party-state aims to suppress dissent.[326] For instance, Ms. Batke says that in 2021, the Nancun Safety Promotion Association, a vigilante group based in Guangdong Province, stated that the group should "work to persuade petitioners—individuals seeking redress from higher-level authorities, often for perceived injustices at the hands of local officials—to return to Nancun from Beijing."[327] Furthermore, the association also said it would keep 24-hour watch over "key persons," or people the CCP deems politically threatening.[328] In 2022, the association was also directed to carry out "stability maintenance" activities, ranging from monitoring and managing migrant workers to "preventing and properly resolving mass incidents," such as peaceful protests.[329]

COVID-19 Response Hones Methods for Controlling Public Movements

China's response to the COVID-19 pandemic relied on social and digital methods to control the public.[330] Xi declared a "people's war on COVID" in February 2020, initiating a nationwide campaign that mobilized all of the Party-state government, nonstate sector, and Chinese public to contain the spread of the disease.[331] Essential to this mass campaign were the grassroots neighborhood organizations at the lowest level of administration, the grid management system, throughout the country.*[332] During the COVID lockdowns, the grid workers controlled residents' entry to and exit from buildings, implemented quarantines, and distributed food and medicine supplies.[333] The CCP also mandated that all Chinese citizens use health code apps, which served as COVID-19 health status certificates, travel passes, vaccination records, contact-tracing devices, and an apparent tool for suppressing protest activity.†[334] Depending on the color of one's health code app, Chinese citizens were either afforded freedom of movement (green) or required to quarantine (yellow or red); those with yellow and red health codes had to submit a negative PCR test before travel restrictions could be lifted.[335]

Although the chaotic end of Zero-COVID policy in December 2022 demonstrated the dysfunction of CCP decision-making and the limits of the Chinese public's tolerance for extreme controls on their movements, the grid system and digital apps have persisted beyond the pandemic, creating latent capacity that the CCP could use to reimpose controls on public movement during a crisis or conflict if needed.[336] In April 2024, the State Council and Central

*The grid management system divides cities and rural areas into areas of approximately 10,000 square meters or approximately 200–300 households. Each grid has several staff and volunteers tasked with both providing services and maintain stability by collecting data, patrolling and monitoring the community, and meditating disputes. Jean Christopher Mittelstaedt, "The Grid Management System in Contemporary China: Grass-Roots Governance in Social Surveillance and Service Provision," *China Information* 36:1 (2022): 3-22; Jue Jiang, "A Question of Human Rights or Human Left?—The 'People's War Against COVID-19' under the 'Gridded Management' System in China," *Journal of Contemporary China* 31:136 (2021): 491–504.

†In June 2022, authorities in the Chinese province of Henan were suspected of restricting some residents' movements using the COVID-related health apps, following protests by customers of rural banks who had attempted unsuccessfully to make cash withdrawals. Tessa Wong, "Henan: China Covid App Restricts Residents after Banking Protests," *BBC*, June 14, 2022.

COVID-19 Response Hones Methods for Controlling Public Movements—*Continued*

Committee issued rules that sought to expand, professionalize, and enhance the "political quality" of grassroots community workers, a broad category including grid workers, and set a target of 18 community workers for every 10,000 residents.[337] Rules such as these have arguably placed grassroots neighborhood organizations in what scholars Taisu Zhang and Yutian An call a state of "permanent 'emergency readiness,'" positioning them to "respond quickly whenever higher authorities need to reimpose tighter control, perhaps even pandemic-era kinds of control."[338]

Some cities and provinces are retaining or repurposing their COVID-era apps in an effort to "hold onto the power and discretion granted to them under the COVID-sparked 'state of emergency,'" according to Patricia M. Thornton, an Associate Professor in the Department of Politics and International Relations at the University of Oxford.[339] For example, the Guangdong Provincial Public Security Department rolled out a new WeChat app, the "Ao Residence Code" to replace its "Ao Health Code" in September 2022.[340] The new app, which links personal information such as a resident's ID number and address in a scannable QR code, is mandatory for Guangdong-based household registration certificate holders, migrants, and foreign residents.[341] Dr. Thornton observes that the app "allows users to enter libraries, museums, and hospitals, effectively granting access to public spaces and 'bundled conveniences' to an officially recognized subset of residents, while providing local officials with an easy means of excluding at will objectionable 'key populations' from public places."[342]

Education Campaigns Emphasize National Security and Patriotism

National security education has gained increasing prominence under Xi's rule, highlighting security as a key priority for the Party-state. As noted previously, in April 2014, Xi proposed the concept of "Comprehensive National Security" at the first meeting of the Central National Security Commission, which was closely followed by the adoption of the National Security Law in July 2015.[343] The law stipulated that the state would incorporate national security education into the country's education system and the training system for civil servants.[344] The law also designated April 15th as National Security Education Day, with the first one being held in 2016.*[345] In a recent article published on National Security Education Day in 2024, MSS Secretary Chen Yixin emphasizes the importance of ideological security, saying the Party and people must "guard the ideological position, oppose and resist all kinds of erroneous thoughts, resist and guard against the infiltration of religious extremism, and strictly prevent all kinds of risks from spreading to the political security field."[346]

*The first National Security Education Day in Hong Kong was held in 2021. Kenji Kawase, "Hong Kong Embraces Xi's 'Holistic' Security Dogma on Education Day," *Nikkei Asia*, April 15, 2024.

China has also promoted national security as a cross-disciplinary field of study in recent years, opening new specialized research centers, programs, and funds.[347] China's Ministry of Education first announced a plan to set up national security studies departments in universities across the country in 2018.[348] In December 2020, the Academic Degrees Committee of the State Council and the Ministry of Education finalized the creation of a new "interdisciplinary" education category, which included "national security studies" as a formal topic.[349] In 2021, the China Institutes of Contemporary International Relations (CICIR), a think tank linked to the MSS, opened the Research Center for Comprehensive National Security.[350] CICIR has also released publications on national security, and the think tank's president, Yuan Peng, held trainings for cadres at different government levels on the issue.[351] In December 2023, the *South China Morning Post* also reported that in the previous five years, more than a dozen Chinese universities had established national security studies departments.[352] According to Ms. Drinhausen and Helena Legarda, both of the Mercator Institute for China Studies, these efforts are part of a broader attempt by the CCP to "future-proof the party state against domestic resistance, [as] the leadership places a strong focus on inoculating China's next generation against harmful influences."[353]

China has also worked on expanding and codifying its patriotic education campaign in recent years to consolidate support around the Party. The patriotic education campaign has been a longstanding feature of Chinese schooling, having been instituted at large scale in the 1990s.[354] The main features of patriotic education in China center around incorporating material related to national concepts of patriotism, such as the CCP's vision of history and traditional culture, as well as emphasizing political loyalty to the Party.[355] Since 2016, a series of directives and opinions for enhancing patriotic education have been issued by the Ministry of Education, merging patriotic themes into exams and coursework across subjects and adding Xi Jinping Thought to all grade levels' curricula in 2021.[356] In a more recent development, the Patriotic Education Law was passed in October 2023, mandating that love of the Party and motherland must take place not only in schools but also across society, including various government departments, enterprises, united front groups, and within families.[357] The law also emphasized the CCP's desire to strengthen publicity and education on unifying with Taiwan and opposing Taiwanese independence.[358]

Party-State Stokes Fears of Foreign Espionage, Foreign Contacts

China's national security propaganda increasingly raises the specter of foreign spies and is creating an atmosphere where citizens are encouraged to be hypervigilant about interactions with foreigners. This trend has manifested in the increasingly active social media presence of China's chief spy agency and a slew of measures that appear intended to hinder contact with foreigners.

MSS Goes Online to Raise Alarm about Foreign Espionage

The MSS launched its social media presence on WeChat in July 2023, transforming itself into a highly visible presence imploring Chinese citizens to join its fight against foreign espionage. Its first post emphasized that counterespionage requires the mobilization of all of society, offering citizens rewards and promises of protection for reporting espionage threats through tip lines.[359] The MSS account posts frequently, often describing the details of supposed espionage activities or recruitment efforts by the U.S. and British intelligence services.[360] It tries to make its propaganda engaging, using short videos and comic strips to convey warnings that China is facing omnipresent espionage threats.[361]

Notably, the MSS is also using its online presence to combat negative narratives about China's economy and emphasize the importance of data protection. Following the December 2023 Economic Work Conference, the MSS account made a post describing foreign assessments of China's slowing economy as an attempt by external forces to contain China's development.[362] In January 2024, the MSS's WeChat account published a comic depicting foreign spies attempting to access secrets related to the rare earths industry.[363] In March 2024, the MSS released a propaganda video warning companies not to allow foreign due diligence firms to investigate them.[364] In May 2024, the MSS also used its WeChat account to accuse foreign academics, universities, and NGOs of illegally collecting geographic and biological data from nature reserves, claiming in one case that a foreign NGO had helped "a certain Western country" to "steal core, sensitive data."[365]

Suppressing Foreign Contacts

China's government has taken other measures to control its population's contacts with foreigners. Supplementing national-level laws discussed above, provinces have issued further regulations, as in the case of Chongqing, which issued implementation regulations for the Counterespionage Law requiring strict oversight of government and SOE employees' travel overseas and of institutions engaged in foreign exchange or travel, among other provisions.[366] Reporting in mid-July 2024 also suggests that some localities increased travel restrictions on students, teachers, and banking sector staff ahead of the summer vacation.[367] Some Chinese nationals have also experienced retaliation for meeting with foreigners. Dong Yuyu, editor of the CCP newspaper *Guangming Daily,* was arrested in April 2023 for meeting a Japanese diplomat at a restaurant.[368] In late 2023, the Chinese wife of a U.S. citizen was detained and accused of providing state secrets to overseas parties after briefly doing administrative work for a U.S. logistics firm.[369]

China also appears to be increasing its restrictions on contract between foreign diplomats and Chinese citizens within the country. China's regulation of foreign diplomatic activity within its borders has always been restrictive, requiring advance notification and often permission in order for diplomats to meet with provincial or local officials and placing strict geographical limits on diplomats'

travel.*[370] Yet in 2024, U.S. Ambassador to China Nicholas Burns stated that China's government had also begun disinviting U.S. Embassy staff from university fairs they had previously attended, citing national security reasons.†[371] There is also new evidence that China is applying pressure on its own population, with Ambassador Burns stating that Chinese nationals are pressured not to attend U.S. Embassy events,‡ and EU Ambassador to China Jorge Toledo stating that China now often withholds permission for academics and students to meet with EU diplomatic staff.[372] (For more on the Chinese government's recent efforts to restrict people-to-people ties within China despite an agreement with the United States to deepen them, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).")

China Refines Capabilities and Processes for Military Mobilization

There is ample evidence that China's armed forces are enhancing their general military preparedness but little evidence they are mobilizing for an imminent conflict at this time.[373] Dr. Heath argued in testimony before the Commission that observers should be careful to distinguish between "normal" activities that all militaries undertake to carry out their assigned missions and the series of abnormal, costly, disruptive activities that would need to occur for the People's Liberation Army (PLA) to transition from peacetime to a war footing.§[374] He stated that much of the evidence cited for the claim that China is preparing for imminent conflict—such as new weapons procurement and increased defense spending—is more accurately characterized as evidence of military preparedness, and crucial steps to mobilize Chinese society for war—such as mass call-ups of its conscripts and the large-scale transfer of resources from civilian to military use—have not occurred.[375]

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*For more on China's regulation of U.S. and other foreign diplomatic activity within its borders, see Lauren (Greenwood) Menon and Jonathan Roberts, "China's Foreign Missions in the United States," *U.S.-China Economic and Security Review Commission*, July 17, 2024.

†According to Ambassador Burns, roughly half of participants chosen for U.S.-funded exchange programs have pulled out over the past two years due to pressure from authorities, schools, and employers. Jonathan Cheng, "In Rare Rebuke, U.S. Ambassador Accuses China of Undermining Diplomacy," *Wall Street Journal*, June 25, 2024.

‡Ambassador Burns said China's MSS or other government bodies had pressured Chinese citizens not to go, or attempted to intimidate those who attended, in the case of at least 61 public events since November 2023. Jonathan Cheng, "In Rare Rebuke, U.S. Ambassador Accuses China of Undermining Diplomacy," *Wall Street Journal*, June 25, 2024.

§According to Dr. Heath, normal activities associated with "military preparedness" include investments in and development of new weapons and equipment, recruitment and training of personnel, and planning and preparation for contingencies. He states that "military preparedness is a normal activity undertaken regardless of whether a country's leadership believes a war is likely or not." By contrast, Dr. Heath argues that more reliable indicators that China is preparing for conflict would be activities associated with "national defense mobilization" or "national war preparation," terms similar to the phrases the PLA itself uses to describe two forms of preparation for conflict ("war mobilization" 战争动员 and "war preparation" 战争准备). National defense mobilization consists of "state-directed activity to transition part or all of the country from a peacetime to war footing through such measures as conscription and the large-scale transfer of resources from civilian to military use." He notes that national defense mobilization can greatly improve a state's war-making capacity, but it is also "enormously costly and disruptive and, therefore, rarely undertaken outside a conflict." By contrast, the national war preparation consists of "changes to policy and procedures in nonmilitary domains to facilitate the execution of combat operations" and can occur in peacetime or wartime. "Although national war preparation is less disruptive and costly than mobilization, it still is premised on an expectation of conflict," Dr. Heath observes. "Thus, it is inherently more political and potentially controversial in a way that military preparedness is not." Timothy Heath, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 13, 2024, 2–3.

Some of the improvements China has made to its mobilization capabilities and processes over the past ten years do merit concern and greater scrutiny, however, because their cumulative effect has been to improve the speed with which the armed forces can mobilize and the ease with which they can requisition civilian resources. In particular, China has passed new measures to improve the processes for mobilizing available manpower, revitalized its militias, streamlined the bureaucracy responsible for defense mobilization, honed its armed forces' skills through emergency response activities, and enhanced the Chinese public's familiarity with defense matters and air raid shelters. At minimum, these reforms have likely given Chinese leaders "moderate and increasing confidence in the system's ability to perform during a conflict," Devin Thorne, a Principal Threat Intelligence Analyst at Recorded Future, testified before the Commission.[376] At maximum, these measures can be read as gradual—and purposely less detectable—steps to position the armed forces for a smooth transition to a war footing, should China's leadership direct them to do so. All in all, it is clear China is more ready now than it was five years ago to launch a war at short notice, and the United States will have less time to identify the warning signs than before.

China Takes Steps to Ensure Manpower Availability

China has refined its system for calling up conscripts and reserves to ensure it can access a sizeable pool of manpower, likely motivated by longstanding military readiness concerns as well as by the CCP's observation of Russia's manpower issues amid its war with Ukraine.[377] Like the PLA,* the Russian military has focused its modernization efforts on creating a smaller, higher-quality force, which ran into manpower issues as the high-intensity conflict became protracted.[378] PLA observers note that Russia found it required more troops for the campaign than originally anticipated and needed to increase personnel numbers by adjusting its conscription policy and its defense mobilization system.[379] Moreover, the announcement of a partial mobilization by the Russian government led to an exodus of young men from the country, prompting the Russian government to de-publicize its conscription efforts and focus on the conscription of rural Russians.[380] China's changes to its conscription and reservist policies are intended to preempt some of these problems, which could just as well emerge in the context of a high-intensity war over Taiwan.

Changes to Conscription Policy Aim to Boost Quality of Conscripts, Speed of Wartime Mobilization

Changes to PLA conscription policy are intended to enhance the quality of conscripts and to streamline the process by which they are mobilized in wartime.† In 2023, the PLA updated its 2001 "Regula-

*China's longstanding modernization effort has focused on professionalizing the military and increasing the quality and technical proficiency of troops, resulting in a reduction in numbers of active-duty troops by design and by dint of recruitment and retention struggles. Kenneth W. Allen et al., "Personnel of the People's Liberation Army," *BluePath Labs* (Prepared for the U.S.-China Economic and Security Review Commission), November 3, 2022, 8, 24, 39.

†It is estimated that about 700,000 personnel out of the PLA's two million active-duty personnel are conscripts, who are obliged to perform two years of mandatory service. Conscripts are considered to be the least trained and capable troops in the PLA but are considered necessary for manpower-intensive missions such as ground combat. Over the past two decades, the PLA

tions on Conscription Work," with official *Xinhua* coverage asserting that the changes would improve the overall quality of conscripts within the PLA, standardize procedures, clearly delegate responsibilities, create a fast and efficient conscription system capable of transitioning between peace and wartime, and provide for military personnel replenishment.[381] The regulations appear to place greater priority on recruiting more educated personnel, call on colleges to assist in military conscription work, and offer incentives for college-educated recruits.[382] In a change from the 2001 version, the new regulations also specifically include wartime provisions that allow the Central Military Commission (CMC) to adjust conscription requirements "according to wartime needs" after issuing a national defense mobilization order.[383] These provisions give the CMC the legal authority to loosen conscription criteria as needed and make more of China's populace eligible for conscription into the PLA.[384] The 2023 regulations also state that former soldiers should be prioritized for recruitment in wartime and offer incentives for retired conscripts who did not initially meet the criteria for promotion the chance to re-enlist at a higher rank during peacetime.*[385] Enhancing the PLA's ability to call up former soldiers and conscripts would be a straightforward way to build up force numbers in an emergency.[386]

Reservist Changes

China has refined the bureaucratic system for the PLA's estimated 510,000 reserve personnel and sought to improve the attractiveness of reserve duty through the passage of a Reservists Law in 2022.†[387] The law clarifies the division of responsibility for reservist work among various departments of the CMC, naming the National Defense Mobilization Department as responsible for assigning reservists to units and calling them up when needed.[388] The law also introduces increased benefits to enhance the attractiveness of reserve duty, including financial aid, subsidies for essentials like food and transportation, and entitlement to medical insurance and compensation during military training and operations.[389]

China Seeks to Adapt Militias to Demands of Modern Warfare

China has revitalized its militia system over the past decade, targeting skilled professionals in high-tech industries and improving

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has sought to recruit better educated and more technically skilled people into the enlisted force, but it will conscript high school and ninth grade-educated personnel where it fails to fill voluntary quotas. Kenneth W. Allen et al., "Personnel of the People's Liberation Army," *BluePath Labs* (Prepared for the U.S.-China Economic and Security Review Commission), November 3, 2022, 3, 28–29; Marcus Clay, Dennis J. Blasko, and Roderick Lee, "People Win Wars: A 2022 Reality Check on PLA Enlisted Force and Related Matters," *War on the Rocks*, August 12, 2022.

*The PLA continues to experience retention issues, particularly with enlisted conscripts. Since 2021, the PLA has offered conscripts incentives to take a "second enlistment" after their two-year initial service period has expired. Kenneth W. Allen et al., "Personnel of the People's Liberation Army," *BluePath Labs* (Prepared for the U.S.-China Economic and Security Review Commission), November 3, 2022, 39–40, 60.

†"Reservists" are defined by law as Chinese citizens aged 18 or older who are either "pre-assigned" to active-duty units in the PLA or are assigned to units made entirely of reservists. Reservists include both enlisted personnel and officers. During wartime, PLA reservists serve as an "important source" of supplementary officers and enlisted personnel. Reservists are to be sourced primarily from former PLA active-duty personnel and technicians, with a minimum service requirement of four years for new reservists. Center for Naval Analysis, "PLA Update: March 23, 2023," March 2023.

the training that militia members receive.*[390] In wartime, militia units assist the PLA with military operations and provide support and additional manpower; in peacetime, militia units assist in humanitarian aid and disaster relief, support military training, and contribute to internal security activities.†[391] Militia personnel retain their civilian jobs during peacetime, and many are employed in nonstate enterprises.‡ Mr. Thorne testified that "militias are an outcome of the [military civil fusion] MCF strategy that seeks to locate and make use of military-relevant resources and skills within the PRC's civilian economic and social base."[392]

China is increasingly forming specialized "new-type militia" forces to leverage civilian technical talent in specialized technology areas for the needs of modern warfare, although practical problems with their incorporation remain. According to Mr. Thorne, "new-type militias" are "armed forces units established among civilian professionals, including those from the private sector," but they can also be established in SOEs and universities.§[393] The professionals in "new-type militias" may be drawn from industries such as information technology, communications, cybersecurity, software, electronics, robotics, unmanned systems, and artificial intelligence, among others.[394] They may be assigned to units focused on cyber offense and defense, online information control, intelligence support, drone operations, maritime search and rescue, and undersea target detection, among others.[395] "New type" militias are not always embraced by the private enterprises in which they are embedded, however. According to Mr. Thorne, militias face practical problems such as a lack of complex and standardized training, insufficient equipment, and the reluctance and noncompliance of enterprises to commit often valuable personnel and equipment to militia responsibilities.[396] For

*The People's Militia (民兵) is one of the three branches of China's armed forces, along with the PLA and the People's Armed Police (PAP). At the national level, the Central Military Commission's National Defense Mobilization Department Militia Reserve Bureau (民兵预备役局) manages militia-related policies, procedures, and requirements. Militias are established under the Provincial Military District system and are managed by the People's Armed Forces Departments (PAFDs, 人民武装部) at the county level and below. There are county-level PAFDs manned by active-duty PLA personnel and grassroots PAFDs manned by civilian cadres whose salaries are paid by local governments and sometimes work on a part-time basis. Devin Thorne, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 13, 2024, 15–16; Conor M. Kennedy and Andrew S. Erickson, "China Maritime Report No. 1: China's Third Sea Force, The People's Armed Forces Maritime Militia: Tethered to the PLA," *China Maritime Studies Institute*, March 2017, 4.

†In the case of a conflict, the 2020 edition of the PLA textbook *Science of Military Strategy* emphasizes the importance of rapid mobilization in order to make effective use of militia forces. The *Science of Military Strategy* identifies rear-echelon duties for the militia such as conducting transportation, resupply, rescue, repair, intelligence, and communication support operations. The *Science of Military Strategy* further notes that the militia can be assigned to perform combat duties independently or in support of active-duty PLA personnel. China Aerospace Studies Institute, "In Their Own Words: Science of Military Strategy 2020," *NDU Press*, January 2022, 441.

‡In 2016, Chinese media claimed that 114 private enterprises had established PAFDs and more than 1,000 private enterprises had established militia units, though Mr. Thorne notes that the total number of militia working in the civilian economy is unknown. Devin Thorne, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 13, 2024, 16.

§For example, there are reportedly cybersecurity-focused militia in SOEs China Mobile, China Telecom, China Unicom, and China Tower as well as the nonstate enterprise Qihoo 360 Technology. 360 Security Technology Stock Co., Ltd. Chinese Communist Party Committee, "360 Group Network Security Militia Fendui Defends the 'Fifth Dimension'" (360集团网络安全民兵分队守护"第五维空间"), *China Comment Net*, May 18, 2021. Translation; Government of Yongxiu, *Notice of the Yongxiu County People's Government and the Yongxiu County People's Armed Forces Department on Issuing the Implementation Plan for the Rectification of the Militia Organization in Yongxiu County in 2021* (永修县人民政府 永修县人民武装部关于印发永修县2021 年民兵组织整顿工作实施方案的通知), April 25, 2021. Translation.

example, some technology companies have reportedly established militia units from non-technical sales staff and members of company Party organizations—instead of from specialized personnel—to ensure the absence of staff for militia training does not undermine productivity.[397]

China has sought to address these problems with improvements to training and incentives.[398] According to Mr. Thorne, some local authorities have instituted consultative mechanisms and reduced the disruptiveness of training to improve the participation of technology enterprises in militia enrollment efforts.[399] He noted one report of a district in Shenzhen, Guangdong, that promised to offer housing and economic assistance to non-state enterprises that established militias.[400] Efforts are underway to improve the content and manner of militia training, and militia units are now training more frequently with the PLA theater commands and the services than they did before.[401]

Streamlining the National Defense Mobilization System

China's national defense mobilization system has historically suffered from several flaws, which have prompted a number of reforms under General Secretary Xi over the past decade to improve it.[402] Critically, local governments were reluctant to share the burden of peacetime administrative work with the PLA and opted to prioritize economic projects that could stimulate GDP growth over defense mobilization projects.[403] Another problem was a lack of clarity regarding the roles and responsibilities within the national defense mobilization bureaucracy.[404] For example, one PLA source from 2018 noted a lack of clear policies for coordinating work and a common problem of organizations failing to even maintain an accurate list of their leadership.[405] It even recounts an "embarrassing scene" of a critical staff member at the municipal level who was unable to name the units of his own organization or explain his own responsibilities, noting that this situation was "not an isolated case."[406] Finally, civilian transportation infrastructure often did not meet military specifications, which could restrict the ability of PLA equipment to be transported via civilian assets in a mobilization scenario.[407] Such deficiencies helped spur a series of reforms in areas such as the national defense mobilization system's bureaucratic structure, information collection system, and relevant laws.

Improved Coordination through National Defense Mobilization Offices

Structural changes to China's national defense mobilization system, most importantly the establishment of National Defense Mobilization (NDM) Offices, have mitigated longstanding difficulties in division of labor between the PLA and state governments. The national defense mobilization system consists of National Defense Mobilization Commissions (NDMCs) at the national, provincial, municipal, and county levels that are each jointly led by civilian and military authorities under the leadership of the CCP.*[408] In 2022,

*NDMCs are supported by national defense mobilization "working offices" that perform work related to specific elements of national defense mobilization. An individual office will provide guidance, develop capacity, and align military requirements with available resources in its area of specialization. These offices are staffed by various civilian and military organizations, and

new civilian organizations called National Defense Mobilization Offices were established within local governments at subnational levels to take over administrative matters that had previously been managed by the PLA's provincial military regions.[409] As Mr. Thorne explains, locating these new offices within the local governments, specifically local Development Reform Commissions, helps "institutionalize the mandate" that civilian authorities focused on economic planning must consider national defense mobilization requirements in their work.[410] In addition, these new NDM offices also contributed to better coordination between government and military branches of the bureaucracy by forming "joint offices" for subnational-level NDMCs to coordinate with the local PLA mobilization bureaus.[411]

China Deploys Surveys to Identify National Defense Resources across Its Vast Economy

China's "national defense potential surveys" have sought to help authorities identify resources throughout China's economy that can be utilized during a crisis, but they have historically faced shortcomings in their reliability.[412] Efforts to collect, maintain, and verify records of the resources are crucial for the NDM system, making national defense potential surveys an important tool for developing insights into existing resources.[413] The surveying process involves the PLA defining its requirements and government agencies implementing the surveys through national defense mobilization offices.[414] Further assistance is provided by government statistical offices and NDM working offices at and above the county level.[415] The surveys are conducted on an annual, monthly, and ad hoc basis.[416] Military authorities gain data from local governments, enterprises, working units, and social organizations, which provide insights into the type, quantity, and quality of resources that are available.[417] However, Mr. Thorne asserts that "like other aspects of the NDM system, national defense potential survey work has been impaired by many problems for a long time."[418] Some of these problems include ill-defined responsibilities among government and military organizations, overreliance on the military and passivity among government officials, unwillingness (in violation of the law) on the part of some organizations to fully disclose relevant information, low-skill workforces that are tasked with data collection and verification, and the treatment of national defense potential data surveys as a formality.[419]

In recent years, China has sought to improve the survey process through the adoption of improved information technologies—efforts that have yielded moderately successful results.[420] For instance,

their configuration is not uniform across NDMCs. The national-level NDMC, for example, has six working offices. Some PLA sources suggest that many local-level NDMCs have eight working offices. Devin Thorne, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 13, 2024, 9, 34; An Yongbing and Liu Qiang, "With the Help of Information, Co-Location of Offices Blazes a New Trail" (信息助力，合署办公蹚新路), *People's Liberation Army Daily,* posted by China's Ministry of National Defense, March 13, 2020. Translation; An Yongbing and Li Rui, "Co-location of the 'Eight Offices' to Improve the Efficiency of Investigations" ("八办"合署提高调查效率), *People's Liberation Army Daily,* posted by China's Ministry of National Defense, May 17, 2019. Translation; Tian Ye, Zhang Kai, and Qiao Zhenyou, "National Defense Mobilization Commission Three Questions Clarify Responsibilities: Who Am I, What Do I Do, How Do I Do It?" (国防动员委员会三问明责：我是谁，干什么，怎么干), *People's Liberation Army Daily,* posted by China's Ministry of National Defense, June 27, 2018. Translation.

in 2018, the CMC National Defense Mobilization Department implemented a new set of annual national defense potential data auditing practices to address issues of data quality, reliability, and specificity.[421] In 2021, the CMC's National Defense Mobilization Department also rolled out a new indexing system for cataloging over 4,000 military and civilian resources that the Party-state and PLA can bring to bear during wartime mobilization.*[422] The new survey guidance allegedly improved the quality of the reported national defense potential data based on an annual audit conducted after the implementation of the new survey guidance, but calls to continue improving the indexing system, particularly with regard to resources in emerging domains, continued in 2021.[423] Furthermore, there have been efforts to implement data-driven and networked solutions to improve data collection as well as resource tracking and tasking.[424] For instance, a January 2023 Ningxia Military District training event demonstrated use of a "national defense mobilization comprehensive information system," and a "veterans information management system," among others.[425] Mr. Thorne argues, however, that as of early 2022, "the overall effort to modernize national defense potential data management with information technology was likely impeded by poor integration, with different information systems using different standards and interfaces," further asserting that the implementation of technology solutions at the county level was also likely incomplete as of mid-2023.[426]

Chinese Laws Enable the Party-State to Requisition Civilian Assets for National Defense

China has institutionalized its ability to mobilize nonstate resources by enshrining the Party-state's powers into law. Through the Chinese constitution, the 2010 National Defense Mobilization Law, and other regulations such as the 2015 National Security Law, the Party-state may requisition virtually any nonstate resource in the context of "public interest" and "national defense requirements."[427] Furthermore, Chinese scholars have said that the state may be able to requisition moveable, immovable, and intangible property, as well as personal labor, goods, and materials that are yet to be produced.[428] Under the 2000 Foreign Enterprise Law, the state may requisition foreign-owned property and, "under special circumstances," appropriate foreign-invested enterprises.[429] The 2019 regulations governing civilian transportation national defense mobilization allows the owners of a requisitioned resource to receive compensation if the resource is damaged or modified during national defense construction or military activities.[430] Under the regulations, people or organizations that own or manage civilian transportation tools, including ports, airports, and train stations, will be compensated if they suffer damage or depreciation, and the state will likely cover the salaries of operating and support personnel.†[431] Foreign enterprises

*The indexing system is divided into nine categories, each with various subclasses of resources. For instance, the "national economy class" includes subclasses of resources including major and supplemental foodstuffs, fuel logistics resources, medicine and healthcare resources, nuclear and chemical disaster emergency response resources, and others. Devin Thorne, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 13, 2024, 26–27.

†The requisition of civilian resources has remained a point of contention among PLA experts along with other aspects of the NDM system. For instance, in 2021, a professor and graduate

may also be entitled to compensation in the context of expropriation under special circumstances.[432]

In recent years, China has sought to ensure that its transportation infrastructure is compatible with national defense requirements through the National Defense Transportation Law (NDTL). According to Mr. Thorne, "The NDTL has likely eased some of the difficulties that military authorities previously faced in adding national defense requirements to transportation infrastructure construction plans."[433] The Party-state implemented the National Defense Transportation Law in 2017,* which sought to strengthen the legal basis for ensuring the military has access to and can make use of China's transportation infrastructure.[434] The law requires the State Council to consult with the PLA regarding national defense transportation planning and technical standards, and it established consultation mechanisms between civilian government and PLA units at the provincial level and above to coordinate plans for transportation projects.[435] The law seeks to ensure that the planning, construction, and use of railroads, roads, waterways, airways, pipelines, and postal services, among other forms of infrastructure,† are compatible with national defense transportation requirements, and provide priority access to China's armed forces.[436] Various Chinese cities and provinces have reported increased compliance with the law. For instance, in April 2020, a state-owned railway operator agreed not to demolish an out-of-service track connecting Anhui and Guangxi Provinces due to its military value, and it also added new military-use stations, ration supply stations, and other military-use improvements to its lines.[437] In December 2020, a Qingdao port reported building a military-civilian dual-use terminal for naval vessels and large civilian roll-on/roll-off ships, a large assembly area, and water and power supply facilities.[438]

Although the National Defense Transportation Law has likely improved adherence to these requirements, problems and limitations still remain.[439] In March 2024, participants at a forum on NDM hosted by the National Defense University Joint Operations College expressed dissatisfaction with the ambiguous responsibilities of different parties in implementing national defense requirements for

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student at the Army Command College argued that the specifics of the process are not defined by law and suggested improving incentives for supporting requisitions as well as issuing punishments for obstructing them. PLA experts have also discussed issues of ambiguity and diverging interests in how compensation could be implemented, while others have argued that the military should have the latitude to approve decisions about the requisition of civilian resources independent of the government. Devin Thorne, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 13, 2024, 13.

*The National Defense Transportation Law stipulates that governments at or above the county level may "requisition civilian transportation vehicles, transportation facilities, transportation materials and other civilian transportation resources based on the needs of national defense." The National Defense Law includes a clause allowing the state to "expropriate or requisition the equipment, facilities, means of transportation, premises, and other properties of organizations and individuals in accordance with the law for the purpose of national defense mobilization." Law of the People's Republic of China on National Defense (China), 2020; National Defense Transportation Law of the People's Republic of China (China), 2017.

†The law asserts that the state and military develop a catalog of projects required to implement national defense requirements. The 2016 version of this catalog includes railways, roadways, airports, ports, and refined oil pipelines as well as fixed, mobile, satellite, and broadcast communications systems; data centers and data exchange platforms of government departments; geopolitical, meteorological, and hydrological information systems; radio frequencies; and civil air defense infrastructure. Devin Thorne, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Stockpiling and Mobilization Measures for Competition and Conflict*, June 13, 2024, 18–19.

building infrastructure such as roads, bridges, and ports.[440] Other issues that have impacted the transportation sector's ability to meet national defense requirements include cost and bureaucracy issues impeding efforts to retro fit existing civilian ships and airport facilities.[441] Furthermore, underfunding and poor-quality training programs have beset railway national defense transportation teams.[442] Mr. Thorne asserts that "a more wholistic assessment of how the NDTL has been implemented in the context of preparing transportation networks for NDM requires more research," as implementation efforts have been inconsistently present in national and subnational transportation-focused five-year plans.[443]

China's Transportation System Would Reveal Wartime Mobilization

Civilian transportation networks will be essential to PLA operations in wartime, and changes in patterns of activity on China's transportation networks could provide advanced warning of military action against Taiwan. According to estimates from the PLA Logistics Academic Research Center, a large-scale PLA joint operation would require approximately "3,000 train trips, 1 million vehicle trips, 2,100 aircraft sorties, 15 oil pipeline battalions . . . and more than 8,000 ship voyages."[444] According to Mr. Thorne, the military's use of the transportation sector would likely result in "large disruptions in civilian passenger and cargo flights as the military amasses required materiel and abnormal patterns of behavior by civilian vessels, especially roll-on/roll-off ships but also deck cargo ships and others."[445] There are approximately 33 military and civilian airports likely to be used by the PLA as points of embarkation for a campaign against Taiwan, which foreign observers could monitor for atypical activity.[446] Mr. Thorne notes that the PLA would attempt to conceal its mobilization through measures such as covering military equipment being loaded onto civilian ships with tarps, but such measures could be detected through satellite imagery and potentially exposed by Chinese social media users documenting military mobilization activities in their localities.[447] Citing other analysts' estimates that the CCP is likely to order a general mobilization "at least three or four months" before an invasion of Taiwan, Mr. Thorne suggests that changes in the civilian transportation sector would be noticeable just a few months before the onset of a large-scale military operation, providing a shorter amount of warning time than other indicators.[448]

Enhancing First Responder Capabilities amid Disasters

China's armed forces—namely the PLA and the People's Armed Police (PAP)—are the first responders to major disasters and emergencies in China and are a key part of China's emergency management system.[449] By responding to internal emergencies, China's armed forces are able to practice skills applicable to military operations in wartimes, such as rapid mobilization, logistics, airlift, transportation, and emergency engineering.[450] The PLA and PAP's responses to the COVID-19 pandemic and recent flooding afforded

the forces with some relevant operational practice but also exposed gaps in communication with civilian counterparts that could undermine mobilization during wartime.[451]

COVID-19 Response Strengthens PLA Logistics Capability

The COVID-19 pandemic offered a real-world test of the PLA's logistics and mobilization capabilities, yielding insights the force will likely keep in mind if it is ordered to engage in a conflict. The PLA undertook large-scale deployments of military personnel and launched the first significant mobilization of the PLA Joint Logistics Support Force (JLSF) in order to combat the pandemic.[452] The JLSF played a significant role in the initial response to the pandemic, coordinating transportation and sustainment to over 4,000 PLA medical personnel over a six-week period.[453] The PLA made extensive use of information technology to track and rapidly deliver supplies throughout the country, demonstrating the "informatizing" of its logistics system.[454] The PLA was able to directly test its airlift capabilities during the early response to the pandemic, debuting its Y-20 large transport aircraft as part of an airlift that brought nearly 1,000 personnel and 47 tons of cargo from cities across the country.[455] The pandemic also allowed the PLA opportunities to test new command and control relationships between the JLSF, theater commands, and the CMC; to balance frontline and rear echelon requirements; to identify and mobilize finite resources; to maintain reliable communications; and to transport personnel and sustain them at their destination.[456]

At the same, the PLA's response to the COVID-19 pandemic also highlighted some weaknesses in civil-military communication and did not feature conditions that would rival the difficulty of a wartime environment. Lack of communication between local officials and the central government, as well as the Party's initial delay in making information about the pandemic public, slowed the PLA's initial deployment to Wuhan.[457] In addition, while the pandemic provided an opportunity to practice logistics, the PLA did not have to manage the transportation of weapons and ammunition or account for doing so under fire, which would necessitate defensive and concealment measures.[458]

Flood Response by PLA and PAP Hones Rescue Capabilities

Throughout 2024, PLA, PAP, and militia troops have been mobilized to respond to major flooding events in China, offering the opportunity to practice rapid deployment, logistics, and rescue operations.*[459] The practical utility of flood response has even been recognized by China's top leadership; following emergency response deployments of over a million PLA, PAP, and militia troops across 17 provinces in 2020, Xi reportedly told the military that the "flood battle is a practical test of the leadership and command system of our army, and the army's combat readiness and ability to perform

*While China has experienced severe floods throughout its history, record-breaking floods and severe typhoons have become a yearly occurrence, requiring evacuations of hundreds of thousands and sometimes upward of a million people and causing billions of dollars' worth of damage and numerous deaths. *Al Jazeera*, "China's Heaviest Rains in 140 Years Kill At Least 20, Leave 27 Missing," August 2, 2023; Global Facility for Disaster Reduction and Recovery at the World Bank, "Natural Disaster Challenges in China: Key Trends and Insights," August 2020.

the tasks."[460] During heavy flooding in Guangdong during April 2024, for example, the JLSF deployed to set up relief stations, the Rocket Force engaged in landslide recovery, and PAP troops cleared roads and delivered supplies.[461] Like the COVID-19 response, flood response has sometimes illustrated difficulties in civil-military coordination that could undermine the efficacy of future mobilization efforts. In 2023, flooding in Hebei demonstrated the political nature of emergency response; some analysts believe that CCP General Office Director Cai Qi was empowered to make decisions regarding flood response rather than the local Party secretaries, including the decision to cut embankments to protect Beijing and the Xiong'an New Area, and that this decision led to deaths of civilians and military responders in Hebei.[462]

Enhancing Civil Defense Capabilities

China's leadership is building upon previously existing programs designed to impress the importance of national defense upon China's citizenry. It has done so by expanding national defense education in schools and building out civil air defense shelters.

China Enhances National Defense Education for the Youth

Chinese leaders see national defense education as an important method for improving the Chinese public's appreciation of the military and positioning it to contribute to the Party-state's military and political goals.[463] The 2001 National Defense Education Law requires defense education to be provided across society, enabling citizens to "enhance their awareness of the importance of national defense, master the basic knowledge of national defense, learn the necessary military skills, develop patriotic enthusiasm and conscientiously perform their obligations to defend the country."[464] Defense education activities typically include lectures and visits to bases, as well as programs targeting students from the primary school to university levels, aimed at improving public perceptions of the armed forces and encouraging recruitment.[465] Some universities are now providing much more intensive training than the traditional marching and drills, including involving students in simulated battlefield situations and using weapons systems such as drones and rocket launchers.[466]

China has taken a number of steps to enhance national defense education in the past five years. In 2023, the Ministry of Education and the Political Work Department of the CMC issued a notice declaring that some primary and secondary schools would be recognized as "national defense education demonstration schools," creating a way to recognize institutions that excelled in national defense education.*[467] In 2022, the central leadership issued an opinion framing national defense education as a means of grappling with increased risks China faces in the world and proposing a number of enhancements, including the recommendations that university students and high school students be required to undertake three

*The first batch of 2,687 schools was announced in February 2023, and in January 2024, an additional 2,431 new primary and secondary schools were identified as "national defense education demonstration schools." *Xinhua*, "An Additional 2,431 New Primary and Secondary National Defense Education Demonstration Schools" (中小学国防教育示范学校新增2431所), January 16, 2024. Translation.

weeks and two weeks of military training, respectively, with certain middle schools encouraged to provide one week of training.[468] A revised National Defense Education Law was passed by the National People's Congress in September, 2024, strengthening national defense education requirements for students at each level of the educational system from primary through university.[469] For example, revisions require primary schools to provide lessons to create a basic level of "national defense awareness" in students and require junior high school students to "master preliminary national defense knowledge and skills."[470] The revisions also improve the level of military training for university and high school students.[471]

China Expands Civil Air Defense Shelters in Coastal Cities

Although China's civil air defense policy spans decades, Xi has made it a national goal to improve existing facilities and build out new ones.* In a meeting held during the Seventh National Civil Air Defense Conference in 2016, Xi signaled to provincial and local leaders that the civil air defense system still needed advancement, urging the country to improve its ability to fight against air raids and carry out "functions and missions of wartime air defense."[472] China's national emergency management plan for the 14th Five-Year Plan period states that it intends to update the standards for shelter construction and improve the planning and layout of emergency shelters as national goals for 2020–2025.[473] In recent years, large-scale efforts to restore and construct new civil air defense infrastructure have picked up, while localities have launched education campaigns that attempt to increase citizens' awareness about how to use civil air defense facilities.[474] According to the written testimony of Lauri Paltemaa, a professor at the University of Turku, the China Civil Air Defense Office is responsible for the maintenance and construction of shelters.[475]

Cities located in provinces close to Taiwan have been the key locations of recent efforts to renovate, enhance, and expand local civil air defense facilities.[476] According to Mr. Thorne, Fujian provincial authorities, as well as authorities in cities such as Fuzhou, Xiamen, and Quanzhou, have inspected, maintained, upgraded, and approved the building of new civil air defense facilities.[477] Examples include the following:

- In March 2024, the Xiamen National Defense Mobilization Office inspected over 30 "early-stage civil air defense projects," which were originally built in the 1960s and 1970s.[478] The projects were inspected for their safety, potential for development, and other factors, indicating they are being checked for continued use in civil air defense and for commercial purposes.[479]

*China's civil air defense policy dates back to the founding of the People's Republic of China, and the government later increased air raid shelter construction significantly in the 1960s before allowing them to fall into disrepair due to constraints on local budgets. After the Taiwan Strait missile crisis, the Party-state codified its civil air defense policies into law in the 1997 Civil Air Defense Law, mandating that all civilian buildings could serve as air raid shelters if they fit appropriate size specifications. Katsuya Yamamoto, "The Revitalization of Renmin Fangkong (Civil Air Defense), China's Civil Protection: A Barometer of Xi Jinping's Resolve in Preparation for Armed Conflict with the United States," *Sasakawa Peace Foundation*, July 3, 2023; Civil Air Defense Law of the People's Republic of China (China), 1997.

- In March 2023, a Quanzhou district issued a list of 18 construction projects with potential civil air defense components, including middle schools, health service areas, residential communities, industry parks, and other facilities.[480]
- In December 2022, Xiamen took measures to improve its civil air defense, including a new "Civil Air Defense Navigation" platform that could aid citizens' discovery of evacuation routes, upgrades to emergency broadcast systems, renovations for "early-stage civil air defense projects," and related educational programs.[481]

The renewal and modernization of China's civil air defense posture in proximity to Taiwan, combined with increased public education, may indicate that the Party anticipates a need for them in the near future.[482] However, Mr. Thorne argues that civil air defense projects likely represent ongoing, long-term efforts to strengthen civil air defense infrastructure and improve national defense mobilization readiness broadly, rather than an urgent effort to brace for near-term conflict.[483] Chinese law mandates that civilian-use construction projects in urban areas include underground facilities that can be used as air raid shelters, making it difficult to tell if the shelters are a signpost of an imminent theat.[484] Nonetheless, Mr. Thorne also notes that since Chinese authorities are still focused on improving civil air defense readiness, "this aligns with the national leadership's very likely assessment that the possibility of an armed conflict in coming years is increasing."[485]

Implications for the United States

China's political, military, and economic activities covered in this chapter are likely intended to serve multiple purposes. In addition to preparing for war, many of these actions evidently reflect Chinese leaders' concerns about regime stability, offering them tools of political control to tamp down dissent, better manage the economy, and respond more effectively to external shocks. For example, China's defense mobilization system can be used to respond to natural disasters or to call up troops. Aside from enhancing readiness for armed conflict, activities discussed in this chapter can also help to prepare China for a long-term strategic competition with the United States and allies and to insulate itself from "de-globalization" and "de-risking" efforts and shocks to the global economy.

Some have argued that the actions identified in this chapter indicate China's leadership has concluded that a conflict is inevitable and is preparing for a war or major hostilities against Taiwan or the United States to commence in the near future.[486] Many of the activities described above could accelerate China's ability to mobilize its military, civilian resources, and the public should its leaders choose hostile action. U.S. military and intelligence officials have stated that Xi has instructed the PLA to be capable of taking Taiwan by 2027, although they have also said there is no evidence China's leadership has made a decision to attack Taiwan.[487] Other observers argue that this target date is intended to give energy and focus to reforms and modernization efforts rather than on setting a timeline for war.[488] Nevertheless, Xi has made clear that a central

aspect of his policy of "national rejuvenation" is China's complete "reunification" with Taiwan.[489] The PLA's practice of strategic deception and its increased activity around Taiwan further complicate attempts to discern whether or not China is actively preparing for an imminent war.

If the political, economic, and military activities covered in this chapter were part of an imminent march to war, some experts argue that one would expect to see additional, unambiguous indicators and activities. For example, Chinese military training patterns would shift, with a noticeable uptick in defense mobilization training efforts such as amphibious exercises involving civilian shipping.[490] China's emergency management system may launch education campaigns and hold trainings on how to evacuate, take shelter, and administer first aid, particularly in Chinese provinces closest to the anticipated conflict area.[491] There would probably be a significant upward departure from the trailing three-year and five-year average aboveground crude oil storage utilization rates. Aboveground tank storage capacity utilization beyond 65 percent should therefore be treated as a "yellow flag" justifying deeper scrutiny.[492] China might shift some of its currency reserves into alternative currencies or assets such as gold as well as the currency of key trading partners such as Brazil, South Africa, Turkey, Malaysia, and Indonesia.[493]

Various explanations for China's activities are not mutually exclusive, and many of the activities being undertaken are "dual-use"—capable of serving multiple policy goals, some consistent with preparations for conflict and others likely less directly aggressive. Any judgment about the significance of the activities described in this chapter should be tempered by the fact that motives are not always—or even often—singular, particularly as here when the observed activities are so varied that numerous disparate policy rationales are likely involved. Policies often can and do have multiple motivations and advance multiple goals. Oversimplification, and premature conclusions about intentions, however appealing or apparently compelling, can lead to flawed policy responses.

Ultimately, U.S. policymakers have powerful reasons to be concerned about China's actions and intent. China's aggressive control, resilience, and mobilization activities have made it more prepared to engage in a conflict over Taiwan or elsewhere in Asia and more capable of conducting hostilities today than it was even a few years ago. Furthermore, many of China's recent policies, combined with tightened controls on access to information, could reduce the visibility of actions that might be signals of preparations for imminent war. Finally, these activities have reduced the deterrent effect of various nonmilitary policies and external constraints on China. Thanks to their recent actions, China's leaders are now likely less constrained by domestic political concerns, food security concerns, energy shortage challenges, or threats of U.S. financial sanctions. Accordingly, greater emphasis may need to be placed on the deterrent effect of credible preparations for coordinated military and international political action.

ENDNOTES FOR CHAPTER 7

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CHAPTER 8: CHINA'S EVOLVING COUNTER-INTERVENTION CAPABILITIES AND THE ROLE OF INDO-PACIFIC ALLIES

Abstract

Over the past two decades, China has invested heavily in capabilities to counter military action by the United States and its allies in the event of a conflict in the Indo-Pacific. As a result, U.S. forces and bases in the region would face a significant threat from the People's Liberation Army (PLA) in any regional contingency involving treaty allies and/or security partners, and the outcome of any such conflict is far from certain. In addition, U.S. allies Japan, the Philippines, and Australia perceive China's military buildup and aggressive actions as a growing threat to their national security and are deepening defense collaboration with the United States. As the United States continues to enhance its capacity to respond to Chinese aggression, it must navigate both potential differences with allies about the parameters of cooperation during a conflict as well as questions about how to best adapt its force posture, capabilities, and defense industrial base.

Key Findings

- The PLA plans to counter military action by the United States and potentially U.S. allies in the event of a regional conflict. Since at least the early 2000s, China's leadership has viewed the U.S. military's presence and alliance activities in the Indo-Pacific as threatening, and it continues to express concern about new developments that combine deepening allied cooperation with an expanded U.S. military footprint in the region.
- China's assertion that it will militarily defend its disputed territorial and maritime claims threatens U.S. allies and security partners in the Indo-Pacific. Should China's leadership decide to use force to enforce its claims in the South or East China Seas or with regard to Taiwan, this aggression could trigger U.S. defense commitments.
- The PLA continues to improve the quality and quantity of military capabilities needed to counter U.S. military action in the event of a conflict, including a large arsenal of ballistic and cruise missiles, air defense systems, advanced fighter jets, maritime forces, and electronic warfare (EW) capabilities.
- The PLA has also developed a redundant and resilient architecture for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) to protect its own systems from attack, and it increasingly has the capability to disrupt or paralyze an adversary's C4ISR system. China's advancements

in counter-C4ISR capabilities such as directed energy weapons and anti-satellite technologies may threaten the United States' ability to access its own C4ISR networks for reconnaissance, targeting, and other functions in peacetime or wartime.

- Despite improvements to a broad suite of capabilities, the PLA still faces challenges in logistics and sustainment. The PLA's maintenance system may struggle to quickly repair and resupply its advanced platforms and weapons systems under harsh battlefield conditions, impacting the PLA's ability to project and sustain combat power.
- Chinese military experts perceive that U.S. and allied militaries are adapting to the PLA's improved capabilities and force posture. They observe that the United States and its allies are strengthening their missile defense capabilities while also working to improve their ability to strike China's forces. They also note that new operational concepts emphasizing geographic dispersion and joint integration across warfighting domains could also contribute to U.S. and allied forces' survivability.
- U.S. allies in the Indo-Pacific are adjusting their defense policies in response to Beijing's aggressive military posture and activities. Japanese leaders are concerned about a possible regional conflict and therefore seek to enhance Japan's military capabilities and interoperability with the United States. The current government of the Philippines views cooperation with the United States and other partners as core elements of its response to China's military and gray zone threats in the South China Sea and its own military modernization efforts. Australia seeks to deepen security cooperation with the United States, its chief defense partner, while re-posturing its own military for the possibility of great power conflict. Nevertheless, allies' interest in working with the United States to address threats from the PLA does not necessarily imply a commitment to allow U.S. military access to their bases during a conflict or guarantee the participation of allied military forces.

Recommendations

The Commission recommends:

- Congress direct the U.S. Department of Defense to produce within 60 days a classified net assessment report on current People's Liberation Army (PLA) Command, Control, Communications, Computers Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities and PLA electronic warfare (EW) capabilities (including electronic attack and electronic protection capabilities). The report should examine U.S. counter-C4ISR and counter-EW capabilities, assess the resiliency of U.S. capabilities, identify counter-C4ISR and counter-EW gaps, and provide a menu of procurement options to close the gaps. Not later than 60 days after its completion, the U.S. secretary of defense shall provide the report to the appropriate congressional committees and brief them on its findings.

- Congress direct the Office of the Director of National Intelligence, in conjunction with the U.S. Departments of Defense, Commerce, and the Treasury and other relevant agencies, to conduct a comprehensive review of potential technological chokepoints across the People's Republic of China military industrial base and devise plans to apply controls, in conjunction with allies, to slow China's military development.
- Congress reinvigorate and recommit to space as an area of strategic competition, including by conducting a review of the commercial space industry to determine if there are regulatory updates that would ensure that the U.S. commercial space industry is able to innovate as quickly as possible while maintaining safety as a top priority.

Introduction

China continues to develop capabilities to resist future military action by the United States in a conflict involving U.S. allies and partners in the Indo-Pacific, such as a PLA invasion of Taiwan or effort to control waters and disputed features in the South and East China Seas.*[1] The PLA has invested heavily in air, maritime, missile, space, and EW capabilities to target and degrade U.S. forces and bases in the Indo-Pacific region.[2] As a result, the threat to the United States and its allies is growing more acute.

"Anti-Access/Area Denial" and "Counter-Intervention"

This chapter uses a set of related terms to describe PLA capabilities relevant to restricting the access and operations of foreign military forces. "Anti-Access/Area Denial" (A2/AD) is a U.S. military term referring to an opponent's military operations that aim to restrict military forces' ability to enter into a theater of operations (anti-access) and to restrict military forces' freedom of action within an area of operations under the opponent's direct control (area denial).[3] This chapter refers to military capabilities that could contribute to such operations as "A2/AD capabilities." These capabilities include ballistic and cruise missiles, air defense systems, advanced bombers, maritime forces, and EW capabilities.[4] "Counter-intervention" is an English term used to describe China's operational approach to employing military capabilities that would enable it to deter and, if needed, defeat a foreign military's attempts to become involved in a conflict in areas adjacent to China.[5] Counter-intervention does not itself constitute a Chinese strategy; rather, it is a component of PLA operational practice with operational and strategic implications for the United States and its allies.[6] This chapter uses the term "counter-intervention

*China views resolving longstanding territorial and maritime claims in these areas as falling within the scope of its stated national defense objective to defend China's "sovereignty, security, and development interests." China's 2019 defense white paper specifies that this includes safeguarding "national sovereignty, unity, territorial integrity and security"; deterring and resisting "aggression"; opposing and containing "Taiwan independence"; and safeguarding China's "maritime rights and interests." It also includes other objectives related to political and social stability, Tibet, sustainable development, space, electromagnetic, and cyber. China Aerospace Studies Institute, *In Their Own Words: China's National Defense in the New Era*, March 16, 2021, 6–7; State Council Information Office of the People's Republic of China, *China's National Defense in the New Era*, July 2019, 7.

"Anti-Access/Area Denial" and "Counter-Intervention"—*Continued*

scenario" to refer to a situation in which the PLA seeks to resist and defeat a foreign military's involvement in a conflict in the Indo-Pacific, including military action by the United States or its allies in response to a PLA invasion of Taiwan. It uses the term "counter-intervention capabilities" to refer to A2/AD capabilities used in a counter-intervention scenario.

This chapter evaluates China's counter-intervention capabilities as well as U.S. and allied efforts to address the regional security challenges they pose. The chapter begins with an assessment of China's perceptions of U.S. and allied military actions in the Indo-Pacific and its investment in capabilities that disrupt U.S. and allied abilities to defend against, target, and strike Chinese assets in conflict. It then examines the value of U.S. alliances in countering China's counter-intervention and surveys the approaches and perspectives of three U.S. allies in the region: Japan, the Philippines, and Australia. It concludes by discussing implications for the United States. The chapter draws on the Commission's March 2024 hearing on "China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners," consultations with experts, open source research and analysis, and the Commission's June 2024 fact-finding mission to Taiwan, Japan, and U.S. Indo-Pacific Command.

China's Approach to Countering U.S. and Allied Military Actions in the Indo-Pacific

China's leadership views the U.S. military's presence, activities, and alliance commitments in the Indo-Pacific region as hostile, leading the PLA to focus significant efforts on planning and training for the possibility of U.S. military involvement in a regional conflict. This perceived need to deter and contest U.S. military activity informs its operational planning, its intense observation of U.S. and allied defense cooperation, and its investment in a suite of capabilities designed to restrict enemy forces' operations in the Indo-Pacific region.

China's Leadership Views U.S. Indo-Pacific Military Activities and Alliances as Hostile

China's defense leadership has long viewed the U.S. military presence and alliances in the Indo-Pacific region as a threat to China's security interests. Every Chinese national defense white paper* since 2000 has referenced U.S. military presence and deployments as well as U.S. alliance activities in the Indo-Pacific among the chief challenges in China's security environment.†[7] In 2000, the

*China's defense white papers are policy documents published every few years that outline the country's security objectives and military activities at a high level. Dennis J. Blasko, *The Chinese Army Today: Tradition and Transformation for the 21st Century*, Second Edition, Routledge, 2012, xv–xvi.

†China's 2000, 2004, 2006, 2008, 2010, 2015, and 2019 white papers mention the United States by name with regard to these activities. The corresponding statement in the 2002 and 2013 white

defense white paper listed "negative developments in the security of the Asia-Pacific region," including "the United States… further strengthening its military presence and bilateral military alliances in the region."[8] Nearly two decades later, China's 2019 white paper delivered a similar message, stating, "The U.S. is strengthening its Asia-Pacific military alliances and reinforcing military deployment and intervention, adding complexity to regional security."[9] With regard to military presence, the series of nine white papers over this period demonstrates an enduring concern about the United States increasing, adjusting, and reinforcing its military deployments in the region.[10] With regard to alliances, the white papers reiterate perceived threats from the United States strengthening, consolidating, and enhancing its regional alliance relationships generally, and on several occasions they draw specific attention to alliance coordination between the United States and Japan, South Korea, and later, Australia.[11]

Influential experts within China's strategic policy community voiced similar concerns during the same two-decade period. In 2011, a professor from China's leading military academy, National Defense University, published a book entitled "On Maritime Strategic Access," which argues that China faced strategic maritime encirclement by the United States and its allies in the Pacific.[12] The author claims that during the Cold War, the United States had "used the offensive system of the large number of military bases and island chains" in the Pacific to "build a 'crescent-shaped maritime encirclement'" of China and the Soviet Union, "besieging" them and seeking to control their maritime strategic access to the Pacific.[13] The book then claimed that since the end of the Cold War, the United States has sought to seal off China's maritime access to the Indian and Pacific Oceans through a ring of military bases along an "island chain blockade line," pointing out deployments in Japan, South Korea, Guam, Hawaii, and the Western Pacific in particular.*[14] In 2011, a PLA expert writing for the journal of an influential research organization affiliated with China's Ministry of State Security (MSS) argued that the United States was deliberately exaggerating the threat of China's A2/AD capabilities to justify investing in advanced weaponry, shifting military deployments to the Pacific, and increasing its "containment" of China.[15] The author argued that the United States sought to use its Pacific military presence to "interfere in issues concerning China's core interests," namely China's claims to Taiwan, in the South China Sea, and in the East China Sea.[16] An

papers reference the United States in oblique statements about "certain" or "some" countries. China Aerospace Studies Institute, *In Their Own Words: 2019 China's National Defense in the New Era*, March 16, 2021; State Council Information Office of the People's Republic of China, *China's Military Strategy*, May 2015; Information Office of the State Council of the People's Republic of China, *The Diversified Employment of China's Armed Forces*, April 16, 2013; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2010*, March 31, 2011; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2008*, January 20, 2009; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2006*, December 2006; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2004*, December 2004; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2002*, December 2002; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2000*, October 2000.

*Regarding Japan and South Korea, the text claims that the United States had formed its military alliances with these states specifically "to suppress the PRC's strategic space along the maritime direction." China Aerospace Studies Institute, *In Their Own Words: On Maritime Strategic Access*, April 2024, 236.

article in the same journal in 2016 describes the U.S. military's forward deployment to the region as a key enabler of undesirable U.S. "coercion" in the East and South China Seas.[17]

Characterizations of U.S. "Deterrence" in Chinese Sources

Although official and unofficial Chinese sources occasionally describe U.S. policy as "deterrence" and acknowledge that the United States seeks to "deter" certain Chinese military actions, they generally do so while dismissing U.S. actions as hostile or destabilizing. Some scholarly sources explore what they describe as U.S. "deterrence" policy at length; for example, two articles in China's *Journal of International Security Studies* in 2022 detail what the authors call a U.S. strategy of "deterrence by denial" against China and the associated trends in U.S. military development.*[18] The authors variously acknowledge that the United States seeks to prevent China from launching a military attack in the Western Pacific against Taiwan, U.S. forces, or U.S. allies, or from forcibly resolving disputes in the South China Sea, but they still dismiss U.S. commitments to regional stability and conclude that the United States sought to "contain" China and pursue its security at China's expense.†[19] Official statements from China's Ministry of Foreign Affairs and Ministry of National Defense also occasionally mention U.S. "deterrence"‡ as part of their effort to delegitimize U.S. actions. Some accuse the United States of using "deterrence" as a façade to conceal aggressive intentions, while others simply claim that trying to "deter" China is an aggressive act in itself.[20] China's Ministry of Foreign Affairs also expresses the perspective that U.S. efforts to deter China through nuclear weapons deployments, nuclear sharing, alliance commitments to allies, and activities in cyberspace are motivated by aggression.§[21] Finally, Chinese officials have stated that China cannot

*A state practicing "deterrence" seeks to persuade an opponent to refrain from undertaking a specific action. Deterrence relies on credible threats that create fear in the mind of the opponent that if it undertakes the unwanted action it either will be unable to achieve its objective—which is known as deterrence by denial—or will suffer unacceptable retaliation for doing so—which is known as deterrence by punishment. For more on deterrence and its application to the Taiwan Strait, see U.S.-China Economic and Security Review Commission, Chapter 4, "A Dangerous Period for Cross Strait Deterrence: Chinese Military Capabilities and Decision-Making for a War over Taiwan," in *2021 Annual Report to Congress*, November 2021, 390–392.

†This negative view of U.S. intentions also informs assessments by both authors that U.S. deterrence of China may not succeed. One author describes a security dilemma in which China will "strive to break out of" what he calls "military intimidation" by the United States and its allies and claims that this will "inevitably" lead to the failure of U.S. deterrence. The other author draws on the concept in deterrence theory that successful deterrence requires coupling coercive threats with "reassurance" that the threat will not be carried out if the deterred party refrains from taking the unwanted action. The author argues that, for both the United States and China, "coercive threats" have begun to overwhelm "reassurances," leaving deterrence unbalanced and potentially ineffective. Chen Xi and Ge Tengfei, "An Analysis of the United States' Deterrence by Denial Strategy against China" (美国对华拒止性威慑战略论析), *International Security Studies*, September 16, 2022, 24. CSIS Interpret Translation; Zuo Xiying, "Adjustments in the United States' Conventional Deterrence Strategy against China" (美国对华常规威慑战略的调整), *International Security Studies*, September 16, 2022, 18. CSIS Interpret Translation.

‡Many other official descriptions of U.S. and allied actions by these institutions never acknowledge that they are intended to deter China from military action, instead simply describing them as belligerent, provocative, and aimed at undermining China's security. China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Lin Jian's Regular Press Conference on July 11, 2024*, July 11, 2024; China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Mao Ning's Regular Press Conference on May 27, 2024*, May 27, 2024.

§On multiple occasions in 2024, China's Ministry of Foreign Affairs adopted this angle in an apparent attempt to delegitimize U.S. policy on North Korea. In one statement, a ministry

Characterizations of U.S. "Deterrence" in Chinese Sources—*Continued*

or will not be deterred from undertaking what they regard as appropriate actions toward Taiwan or in the South China Sea, implying that the United States intends to dissuade them from undertaking a particular course of action.[22]

China Perceives Challenges to Its Counter-Intervention from the United States and Its Allies

China's leadership likely perceives intensified threats from recent enhancements to U.S. military capabilities, concepts, and alliance relationships. Since China began fielding A2/AD capabilities in the early 2000s, China's official media as well as PLA- and government-affiliated academic journals have continuously noted U.S. military efforts to counter the PLA's counter-intervention through its own advances and through deepening relations with allies.[23] Although it is challenging to assess China's overall level of confidence in its current counter-intervention capabilities through disparate open source reporting, analysis of China's past observations reveals several areas in which continued U.S. efforts could challenge PLA objectives. According to testimony by Maryanne Kivlehan-Wise, director of the China studies program at the Center for Naval Analyses, China's media and academic journals express concern about both ongoing U.S. efforts to increase the quality and quantity of its military capabilities in the region and U.S. actions to strengthen alliances and security partnerships.[24] She assesses that the most concerning developments to Beijing are those that couple an improvement in an alliance relationship with changes to the U.S. military footprint in the region.[25]

China's government, military, and academic sources point to several trends in U.S. military development with the potential to undermine China's counter-intervention capabilities. Evolution in U.S. strike and missile defense capabilities coupled with new operational concepts have improved the capacity of the U.S. military to strike China's forces while making it more difficult for China to strike U.S. forces in return.[26] Many Chinese government and academic sources have observed increased cooperation between the United States and its Indo-Pacific allies against China's military capabilities and portrayed such cooperation as detrimental to China's interests.

- *Long-range strike capabilities increase U.S. reach:* China's state media and articles from PLA- and government-affiliated academic journals show enduring concern over U.S. development of long-range strike capabilities, which can weaken China's counter-intervention by allowing U.S. forces to attack more effectively from a distance. The 2011 analysis from the journal affiliated with the MSS notes efforts in 2010 to transform the U.S. ter-

spokesperson claimed the United States was heightening tensions in the region by "resorting to military deterrence" against North Korea, and in another they insisted the United States must "desist from acts of deterrence" against the country in order to avoid escalation. China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Mao Ning's Regular Press Conference on June 3, 2024*, June 3, 2024; China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Wang Wenbin's Regular Press Conference on April 3, 2024*, April 3, 2024.

ritory of Guam—which at the time was outside of China's confirmed ballistic missile range—into a hub for long-range strikes as a key avenue for responding to China's A2/AD capabilities.[27] In 2012, China's state media suggested that Guam-based U.S. Air Force bombers paired with stealth fighters may be able to carry out long-range strikes on China.[28] Articles in the journal of the PLA Naval University of Engineering in 2020 discuss the continued value of Guam's long-range bomber force as well as U.S. long-range missile capabilities which could be used for countering China.*[29]

- *Missile defenses make striking U.S. assets more difficult:* Chinese sources have tracked the U.S. military's development and deployment of missile defense systems as a key indicator of its capacity to counter China's counter-intervention capabilities. In 2007, China's state media claimed that deploying missile defense systems near key military facilities in the region was among the first recommendations U.S. military experts put forward to counter China's emerging A2/AD capabilities.[30] Chinese academic journals have since noted the priority successive U.S. administrations placed on improving missile defense in Northeast Asia and the Western Pacific, especially as China's missile capabilities have expanded to reach locations such as Guam that had previously been out of range.[31] Some analysts assess that China's development of hypersonic weapons is motivated by the increasing difficulty of breaking through U.S. missile defense capabilities.[32] One journal article from 2022 even warns that if the United States employs directed-energy weapons technology for missile interception in the future, the resulting increase in cost-effectiveness of missile defense would represent "a qualitative leap in its deterrence by denial capability against China."[33]
- *Indo-Pacific missile deployments increase U.S. and allied strike capabilities:* China's media, government representatives, and other experts have reacted strongly over U.S. and allied efforts to increase missile deployments in the Indo-Pacific region, including but not limited to the sale of U.S. Tomahawk cruise missiles to Japan in 2023, ongoing discussion of deploying intermediate-range ballistic missiles (IRBMs) to Japan's Southwest Islands, and U.S. deployment of a Typhon Mid-Range Capability missile system† in the Philippines in April 2024.[34] The vociferous objection of China's Ministry of National Defense spokesperson to the Philippines deployment suggests China's leadership perceives the system as a serious security risk.‡[35] According to

*The journal also emphasizes the value of U.S. investments in space-based information systems as necessary support for long-range missile strikes. Shi Zhangsong, Gong Wenbin, and Wu Zhonghong, "Status and Development of Long-Range Precision Strike Operations Technology Based on Space-Based Information" (基于天基信息的海上远程精确打击技术现状及发展), *Journal of Naval University of Engineering (Comprehensive Edition)* 17:3 (September 2020): 27. Translation.

†The U.S. Army Typhon Mid-Range Capability missile system launches Tomahawk cruise missiles and standard SM-6 multi-domain missiles and is intended for targets at ranges between 500 kilometers (km) and 2,776 km (310 miles [mi] and 1725 mi). From its location in Northern Luzon, the system could reportedly cover the entire Luzon Strait, PLA bases in the South China Sea, and even China's mainland coastline. Aaron-Matthew Lariosa, "U.S. Army Deploys New Missile Launcher to the Philippines," *Naval News*, April 15, 2024; Ashley Roque, "Army's New Typhon Strike Weapon Headed to Indo-Pacific in 2024," *Breaking Defense*, November 18, 2023.

‡The Ministry of National Defense Spokesperson stated that this action had "put the entire region under U.S. fire, brought a huge risk of war to the region," and "gravely impacted the regional

an article in the Beijing-based *Journal of International Security Studies* in 2022, the introduction of intermediate-range missiles in the first island chain not only strengthens U.S. deterrence but also complicates China's strategic calculations and could even undermine its advantages by forcing investment in expensive defense measures to protect targets within China.[36] China's government representatives have warned the United States that China will take "resolute countermeasures" in response to such deployments but have not specified what those measures would be.[37] Ms. Kivlehan-Wise notes that Chinese experts view missile deployments in the region both as significant military capacity improvements and as indicators of stronger security partnerships between the United States and its allies.[38]

- *New operational concepts could make U.S. forces more survivable:* Chinese observers and military media have taken a strong interest in new operational concepts developed by U.S. military services, such as Expeditionary Advanced Base Operations (EABO) for the U.S. Marine Corps, Agile Combat Employment (ACE) for the U.S. Air Force, Distributed Maritime Operations (DMO) for the U.S. Navy and Marine Corps, and Multi-Domain Operations (MDO) for the U.S. Army.[39] Ms. Kivlehan-Wise testified that common themes in China's media coverage of these U.S. concepts include that they were developed solely to counter China's military, especially within the first island chain, and that they could improve U.S. military stealth, strike, and survivability.[40] For example, a 2023 article from China's Ministry of National Defense newspaper re-circulated by the *People's Daily* notes that these various service concepts derive from an effort to increase the U.S. military's "distributed lethality," which emphasizes the use of flexible and dispersed attack formations to avoid destruction from enemy strikes.[41] China's military and state media have also taken note when U.S. forces practice these concepts in cooperation with security partners in the region.*[42] In 2022, one military analyst writing in the Ministry of National Defense newspaper even argued that the U.S. military has an overall advantage in the development of operational concepts that could provide it an edge over the PLA.[43] Nevertheless, Ms. Kivlehan-Wise testified that China's media has also assessed that the PLA's long-range missile capabilities still have the potential to counter these new operational concepts, making them insufficient for the task of countering China's counter-intervention capabilities.[44] Some coverage has also argued that limitations in U.S. network technology, firepower effectiveness,

security structure," requiring China to exercise "a high degree of vigilance." China's Ministry of National Defense, *Transcript of May 2024 Ministry of National Defense Regular Press Conference* (2024年5月国防部例行记者会文字实录), May 30, 2024. Translation.

*The above-mentioned article from China's Ministry of National Defense newspaper, for example, describes exercises in which military forces from Australia, Canada, France, Japan, the Philippines, and other countries carried out related exercises with U.S. forces. It makes note of foreign media coverage stating that the new operational concepts and their associated tactics had been shared with U.S. allies, and it warns that "in the future, the United States will draw support from its global military alliance system to make 'distributed lethality' more covert and threatening." *China National Defense News*, "U.S. Military Steps Up New Combat Concepts in Exercises" (美军加紧新型作战概念演练), *People's Daily*, November 8, 2023. Translation.

and real-world practice of the concepts present reasons to doubt their effectiveness in practice.[45]

- *Increased force and network integration could support U.S. operations:* China has also observed evolving efforts at increasing the integration of U.S. military operations. In 2014, an article in the *People's Daily* expressed alarm at the then multi-service initiative, "Air-Sea Battle," which aimed to develop cross-domain approaches for countering China's A2/AD capabilities through both inter-service cooperation and greater networked connectivity.[46] In 2016, Party media describing a separate U.S. military initiative to counter China's A2/AD capabilities—known as the "Third Offset Strategy"—pointed out the importance of building a multi-domain "global surveillance-strike network" to the success of the proposed U.S. approach.[47] In 2024, China's military academic media has explored the U.S. Department of Defense (DOD) strategic warfighting concept of Joint All-Domain Command and Control (JADC2), noting the potential advantages of this effort to leverage network technology and integrate command and control across traditional and emerging combat domains, as well as the associated technical and organizational challenges it still poses.[48]
- *Greater U.S.-allied cooperation could complicate China's military environment:* China has also paid attention to the military implications of recent efforts to deepen cooperation between the United States and individual allies and partners. For example, since 2022, Chinese news media and academic journals have described complete, planned, and prospective U.S. and Japanese military deployments and exercises around Japan's southwestern islands as measures that strengthen the allies' military position vis-à-vis China because they increased the range, concentration, and resilience of U.S. offensive capabilities.*[49] After the expansion of the Enhanced Defense Cooperation Agreement (EDCA) between the United States and the Philippines in 2023,† Chinese commentators argued that the United States intends to use the new EDCA sites to improve its position for contingencies related to Taiwan or the Spratlys and that the agreement strengthens the United States' ability to control the Bashi Channel between the Philippines and Taiwan.[50] The Trilateral Security Partnership between the United States, the UK, and Australia (AUKUS) is also a topic of great concern to Chinese observers.[51] Ms. Kivlehan-Wise assesses that AUKUS

*According to testimony from Ms. Kivlehan-Wise, Chinese subject matter experts believe these changes improve the ability of the United States and Japan to track PLA air and naval vessels, deny the PLA access to the Pacific Ocean through key straits, and destroy PLA platforms and infrastructure at sea and on the Chinese Mainland. Maryanne Kivlehan-Wise, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 6.

†EDCA, originally signed in 2014 between the United States and the Philippines, allows the U.S. armed forces a rotational presence at certain military bases in the Philippines. In February 2023, the two countries announced the designation of four additional Philippine bases as EDCA sites, in addition to the five existing sites. Gregory B. Poling, "The U.S.-Philippine Alliance's Very Busy Month," *Center for Strategic and International Studies*, April 12, 2023; U.S Department of Defense, *Philippines, U.S. Announce Locations of Four New EDCA Sites*, April 3, 2023; Karen Lema, "Philippines Reveals Locations of 4 New Strategic Sites for U.S. Military Pact," *Reuters*, April 3, 2023.

has sharply increased China's concern about U.S. Indo-Pacific alliances and security partnerships because of its surprise announcement, the substantial military benefits it grants to the members, and a perception in Beijing that Australia had chosen to side with the United States against China.*[52] (For more on expanding cooperation between the United States and these allies and partners, see "U.S.-Allied Efforts to Address Challenges from China's Military" below.)

- *U.S. undersea warfare capabilities:* The PLA has monitored developments in U.S. submarine and other undersea capabilities because of the likelihood such capabilities will be used to thwart an invasion or disrupt a blockade of Taiwan.[53] China has invested in both submarine and anti-submarine warfare (ASW) capabilities to erode U.S. longstanding advantages in the undersea domain.[54] While the PLA appears to have made some progress in ASW capabilities, notably through the introduction of many airborne and seaborne ASW platforms as well an expanded hydrophone network, foreign and Chinese experts still assess that China "lags behind" the United States in its abilities to detect and destroy enemy submarines as well as to protect its own submarines from enemy detection.[55] Some Chinese sources assert that the PLA may be able to narrow this gap by integrating supercavitation technology into its torpedoes, which enables a torpedo to wrap itself in an air bubble underwater to reduce drag and increase its speed.†[56] Since 2022, some media sources have claimed that Chinese scientists are developing a hybrid anti-ship weapon that travels first through the air as a hypersonic missile before diving and maneuvering below the water as a supercavitating torpedo, allowing it to potentially challenge

*China's Ministry of Foreign Affairs has criticized the partnership as "a clear attempt at countering China" and sought to undermine its legitimacy through public statements. This represents a shift from prior years, in which Australia was viewed as more reluctant to participate actively in frameworks that could be perceived as countering China or choosing sides between China and the United States. Xia Liping, "Xia Liping: The U.S. Indo-Pacific Strategy from the Dual Perspectives of Geopolitics and Geoeconomics" (夏立平:地缘政治与地缘经济双重视角下的美国"印太战略"), *American Studies* 2 (2015). Translation; China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Wang Wenbin's Remarks on AUKUS Nuclear Submarine Cooperation on March 17, 2023*, March 17, 2023; China's Ministry of Foreign Affairs, *Commentary VII on AUKUS: Fire Cannot Be Wrapped Up in Paper; Whoever Plays with Fire Will Perish by It*, October 6, 2022; China's Ministry of Foreign Affairs, *Reality Check: Falsehoods in US Perceptions of China*, June 19, 2022.

†Chinese state and military newspapers have observed other countries' application of supercavitation technology on torpedoes since at least 2015, noting the technology's development by the Soviet Union and its adoption by Russia, the United States, Germany, and Norway. More recent research on the technology's application to anti-submarine warfare was conducted by researchers affiliated with the state-owned defense corporation China North Industries Defense Corporation in a journal sponsored by a state-owned shipbuilding company. These sources have noted advantages of supercavitating torpedoes in speed, flexible firing orientation, large kinetic energy, and cost effectiveness. Later sources list range as an advantage, in contrast to earlier sources that claimed supercavitating torpedoes could not yet match the range of regular torpedoes. Earlier sources also noted difficulties applying guidance technologies in light of the munitions' great speed and warned that supercavitating torpedoes could be easily detected by nature of their bubble trails. Qi Xiaobin et al., "Application of Supercavitation Technology in Anti-Submarine Warfare" (超空泡技术在反潜作战中的应用设想), *Digital Ocean and Underwater Warfare* 5:2 (April 2022): 109, 112–114. Translation; Li Xiang and Huang Kang, "Supercavitating Weapons: Building Their Own Path Underwater" (超空泡兵器:自己造路水下行), *China Military Online*, April 3, 2020. Translation; *Military News*, "Revealing the Secrets of Supercavitating Torpedoes: Underwater Speed as Fast as High-Speed Train and Faster than a Helicopter" (揭秘超空泡鱼雷:水下速度如高铁 比直升机机快), *Xinhua*, October 20, 2015. Translation; Norinco Group, "Northwest Institute of Mechanical & Electrical Engineering" (西北机电工程研究所). Translation. *https://web.archive.org/web/20240806145540/http://xbjd.norincogroup.com.cn/*; China National Knowledge Infrastructure, "Digital Ocean & Underwater Warfare" (数字海洋与水下攻防). Translation.

existing ship defense systems by traveling farther and faster than a traditional torpedo.[57]

- *New developments in U.S. uncrewed underwater vehicles (UUVs) enhance its capabilities to identify, monitor, and track PLA submarines:* Both China and the United States are investing in developing new undersea drones that could play a decisive role in future military conflicts, with uses that include intelligence, surveillance, and reconnaissance (ISR).[58] In February and March 2024, the U.S. Defense Advanced Research Projects Agency (DARPA) conducted full-scale testing of the "Manta Ray" prototype UUV, an autonomous and payload-capable large-scale UUV that mimics the shape and motion of a manta ray and achieves the energy efficiency needed for long-duration missions.[59] China's military, defense industry, and state-run media closely followed DARPA's Manta Ray project, publishing reports detailing its development and capabilities.[60] China's state-run media has highlighted the Manta Ray project's underwater survivability and made note of its potential capability to use AI, big data, and new navigation technologies to "identify, monitor, and track submarines and seabed resources of other countries in disputed waters and key waterways" globally.[61] China is also developing its own mantra ray-inspired UUVs. At the China Military Smart Technology Expo held in Beijing in May 2024, the Boya Gongdao Robot Technology Company displayed its own domestically developed manta ray UUV along with other models of biomimetic autonomous submersibles.[62] One team of researchers at China's Northwestern Polytechnical University has already developed six models of manta ray UUVs that could reportedly conduct tasks ranging from monitoring coral reefs to carrying heavy payloads on long-duration missions with integrated reconnaissance and strike capabilities.[63]

Chinese Commentators Observe U.S. Military Capabilities in the Middle East

Several commentaries in China's Party-state news media view the defense by the United States, Israel, and other partners against Iranian missile strikes on Israel's territory in April 2024 as a successful test of U.S. missile defense technology and alliance coordination. The commentators agree that the large number of attacking weapons successfully intercepted showcased the power of the multilayered missile defense system deployed by the United States and Israel.[64] They also note the important role the U.S. destroyers played in shooting down medium-range ballistic missiles, the contributions of U.S. and UK forces in intercepting drones, and the likely importance of intelligence sharing between the United States, Israel, and other Gulf states before and during the attacks.[65] (For more on China's position on conflicts in the Middle East, see Chapter 5, "China and the Middle East.")

PLA Anticipates U.S. Intervention

Evidence suggests the PLA plans for military action by the United States in the event of a conflict in the Indo-Pacific. In 2014, General Secretary of the Chinese Communist Party Xi Jinping directed the PLA to "make strategy planning and preparations for dealing with a powerful enemy's military intervention," using a term frequently applied in PLA writings to refer to the United States.[66] The 2020 edition of the strategic-level PLA textbook *Science of Military Strategy** makes repeated reference to external military intervention, emphasizing the gravity of potential military intervention carried out by powerful enemies, at a large scale, or at a high intensity.†[67] In one section, the text highlights external military intervention as a "strategic risk" that could result in the PLA facing two or even many enemies at one time.[68] In other sections, it variously describes military intervention as an action the PLA must deter, as an important factor in the timing for beginning and ending a war, and as a critical variable influencing war control and escalation.[69] The 2006 operational-level PLA textbook *Science of Campaigns*‡ similarly frames the "military intervention of a powerful enemy" as a key variable that PLA forces must anticipate, plan for, and—if necessary—adjust to in the course of executing any military campaign.[70] In addition to this general description, the text includes "resist[ing] the military intervention of a powerful enemy" in the list of basic missions for a conventional missile assault campaign, and it provides additional guidance on handling opposition in the context of an offensive campaign against island reefs.[71]

China's Military Objectives Implicate U.S. Defense Commitments in the Indo-Pacific

Several of China's stated military objectives threaten the interests of U.S. allies and security partners in the Indo-Pacific, including those to whom the United States has a treaty defense commitment. China's 2019 defense white paper includes among the country's national defense aims safeguarding "national sovereignty, unity, territorial integrity and security"; deterring and resisting "aggression"; opposing and containing "Taiwan independence"; and safeguarding China's "maritime rights and interests."[72] This same document claims the Senkaku Islands in the East China Sea and all features in the South China Sea as inalienable parts of China's territory while explicitly reserving the option to use

**Science of Military Strategy* is a core military textbook for senior PLA officers on how wars should be planned and conducted at the strategic level. Joel Wuthnow, "What I Learned from the PLA's Latest Strategy Textbook," *Jamestown Foundation*, May 25, 2021.

†Although no specific countries are referenced by name, these descriptions most likely characterize the way the PLA considers intervention from the United States. In most of these instances, the text either characterizes the intervening party as a "strong" or "powerful" enemy or enemies or as a "great" or "major" power or powers, or it characterizes the intervention as "large-scale" or "high-intensity." China Aerospace Studies Institute, *In Their Own Words: Science of Military Strategy 2020*, January 2022, 44, 46, 140, 192, 198, 257, 259.

‡*Science of Campaigns* is a military textbook released by China's National Defense University in 2006. According to the China Aerospace Studies Institute, it is studied by almost all PLA officers in senior academies. The textbook designs a "campaign" as "the operational activities composed of a series of battles conducted under a unified command by a large formation to achieve partial… or overall… goals of a war." China Aerospace Studies Institute, *In Their Own Words: PLA's Science of Campaigns*, 2006, [v], 19.

China's Military Objectives Implicate U.S. Defense Commitments in the Indo-Pacific—*Continued*

force if necessary to unify Taiwan with the Mainland.*[73] China maintains an interpretation of its "maritime rights" that is contrary to well-established international law and includes privileges to which it is not entitled, and it has repeatedly demonstrated a willingness to advance its claims and interests in these areas through aggressive and dangerous behavior.[74] A conflict in the Senkaku Islands or in the South China Sea could trigger defense commitments under the United States' treaties with Japan† and the Philippines.‡[75] The United States also has a stated interest in peace across the Taiwan Strait and an expectation that issues will be resolved without the use of force.[76] Since at least the 1990s, Chinese military planners have acknowledged the need to base military planning for a war against Taiwan on the assumption of U.S. involvement, and they have worried that the PLA could be defeated if it does not rectify its various technological and manpower-related deficiencies.§[77]

China's Military Capabilities for "Counter-Intervention"

China has developed military capabilities designed to undermine the U.S. military's ability to become involved in a conflict between China and its neighbors.[78] China's plan to counter U.S. military intervention requires the capacity to find U.S. forces, thwart their operations, hamper their ability to rely on satellites and other networked systems, and destroy forward-based assets as well as assets at long distances.[79] Among the most important capabilities for these

*Other governments in the Indo-Pacific hold competing sovereignty claims in the region. For instance, Japan, Taiwan, and China claim the Senkakus. China asserts sovereignty over the island of Taiwan, a claim disputed by the government in Taipei. Taiwan, the Philippines, Malaysia, Vietnam, Brunei, and Indonesia also claim territory in the South China Sea. Ben Dolven et al., "China Primer: South China Sea Disputes," *Congressional Research Service* IF10607, August 21, 2023; Taiwan's Ministry of Foreign Affairs, *MOFA Condemns False Claim Regarding Taiwan's Sovereignty in Joint Statement Issued by China and Russia*, February 5, 2022; Mark E. Manyin, "The Senkakus (Diaoyu/Diaoyutai) Dispute: U.S. Treaty Obligations," *Congressional Research Service* R42761, March 1, 2021.

†In their security treaty, the United States and Japan commit to act in response to "an armed attack on either Party in the territories under administration of Japan," which includes the Japanese-administered Senkaku Islands. David Vergun, "Austin Says U.S. Committed to Defending Japan, Including Senkaku Islands," *DOD News*, October 4, 2023; *Reuters*, "Obama Says Disputed Islands within Scope of US-Japan Security Treaty," April 22, 2014; Japan's Ministry of Foreign Affairs, *Japan-U.S. Security Treaty*, January 19, 1960, Article V.

‡In their mutual defense treaty, the United States and the Philippines commit to act to meet common dangers in the event of an armed attack against either party in the Pacific, which, as clarified in the countries' 2023 Bilateral Defense Guidelines, includes an attack on either state's public vessels, aircraft, or armed forces (including coast guards) anywhere in the South China Sea. U.S. Department of Defense, *FACT SHEET: U.S.-Philippines Bilateral Defense Guidelines*, May 3, 2023; U.S. Department of State, *U.S. Collective Defense Arrangements*; Avalon Project at the Yale Law School, "Mutual Defense Treaty Between the United States and the Republic of the Philippines; August 30, 1951."

§In response to previous acts of Chinese aggression or military coercion against Taiwan during the so-called "First Taiwan Strait Crisis" (1954–1955), the "Second Taiwan Strait Crisis" (1958), and the "Third Taiwan Strait Crisis" (1995–1996), the United States successfully leveraged credible military threats to deter a Chinese invasion or to deter escalating use of force. Kristen Gunness and Phillip C. Saunders, "Averting Escalation and Avoiding War: Lessons from the 1995–1996 Taiwan Strait Crisis," *National Defense University Press, China Strategic Perspectives* 17 (December 2022): 37; U.S.-China Economic and Security Review Commission, *2021 Annual Report to Congress*, November 2021, 391.

missions are the PLA's C4ISR* networks, EW assets, and offensive missile forces, each of which it has significantly improved over the past two decades. At the same time, however, the PLA continues to contend with issues sustaining and maintaining its warfighters in combat.

Achieving Information Dominance in Conflict Involving the United States

China views "information dominance" as a key effort to control the battlespace and gain operational advantage in warfare.[80] Information dominance is defined by the PLA as the ability to establish control of information flows in a particular space and time by collecting and managing information and employing information more precisely than the adversary.[81] Chinese military strategists believe information dominance is a prerequisite to achieving air and maritime dominance and is critical to the PLA's combat success in any regional conflict.[82] The PLA pursues information dominance by conducting informationized warfare, which utilizes information systems, data gathering and fusion, and command automation tools to enable joint operations and gain superiority in the information domain in combat.[83] Chinese military writings describe modern warfare as involving "systems confrontation" or "systems destruction warfare," meaning a conflict is fought between adversarial operational systems.†[84] The PLA views "systems confrontation" as the means to paralyze the functions of an adversary's combat and operational systems in the air, sea, land, space, cyber, and electromagnetic domains using kinetic and non-kinetic attacks.[85] Anticipating such attacks in turn, the PLA would also prioritize the defense of its own C4ISR systems against enemy disruptions and preserve its access to battlespace data.[86]

Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR)

The PLA is working to build a robust C4ISR infrastructure to quickly find U.S. military forces and achieve battlefield information dominance in the event of kinetic conflict.[87] C4ISR enables militaries to access—and to deny enemies' access to—battlespace information, including locating, tracking, and targeting enemy assets.[88] The PLA has studied the United States' reliance on C4ISR systems in

*C4ISR is an acronym that refers to a collection of individual systems. Other variations of "C4ISR" may include additional systems such as adding "cyber" or "targeting" (C5ISR-T). In China's *Science of Military Strategy 2020*, it describes the battlefield information network as a "C4ISRK" system (Command, Control, Communications, Computer, Intelligence, Surveillance, Reconnaissance, Kill) and refers to C4ISRK as a system the U.S. military relies on to synchronize combat commands at all levels. J. Michael Dahm, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 4; China Aerospace Studies Institute, *In Their Own Words: Science of Military Strategy 2020*, January 2022, 349.

†According to Jeffrey Engstrom, senior political scientist at the RAND Corporation, the PLA's theory of victory in modern warfare is no longer centered on the annihilation of enemy forces. Instead, it is now based on system destruction warfare, in which victory may be achieved by the ability to "disrupt, paralyze, or destroy the operational capability of the enemy's operational system." Jeffrey Engstrom, "Systems Confrontation and System Destruction Warfare: How the Chinese People's Liberation Army Seeks to Wage Modern Warfare," *RAND Corporation*, February 1, 2018, iii.

recent wars and observed how the U.S. military uses these systems to conduct reconnaissance, provide early warning, and enable the real-time synchronization of combat commands at all levels.[89] Recognizing that its own C4ISR was an area of substantial weakness, the PLA began modernizing, upgrading, and expanding its communications infrastructure in the 1990s to support future command and control capabilities.[90] According to J. Michael Dahm, senior resident fellow for aerospace and China studies at the Mitchell Institute for Aerospace Studies, decades of investment have resulted in the PLA developing a robust, redundant, and resilient C4ISR system.[91] Mr. Dahm further suggests that China's C4ISR architecture could provide military advantages to the PLA by establishing localized information, air, and maritime dominance in key areas out to the second island chain and by enabling strikes on U.S. bases and deployed forces in the Indo-Pacific region.[92] The PLA is also looking to leverage artificial intelligence (AI) capabilities to accelerate its processing of imagery, signals, and other ISR data across the land, air, sea, and space domains.[93] (For more on the PLA's use of AI to enhance its ISR capabilities, see Chapter 3, "U.S.-China Competition in Emerging Technologies.")

China's C4ISR consists of a suite of interconnected systems to support PLA warfighter decision-making and targeting capabilities across varied domains.[94] These include:

- *Terrestrial (ground-based) C4ISR:* China's terrestrial network is the core architecture of the PLA's broader C4ISR system.[95] The PLA's National Defense Communications Network, upgraded in the mid-1990s to high-speed fiber-optic cable, serves as the PLA's primary communication network.[96] The network connects the PLA command centers to units in the field with reliable communications[97] According to Mr. Dahm, compared to the space-based communications capabilities, the "hard-wired" connectivity of the National Defense Communications Network could provide the PLA with more secure communications that would be difficult for an attacker to disrupt or destroy.*[98] China has also constructed skywave over-the-horizon (OTH) radar systems to increase the PLA's ability to locate targets such as ships and aircraft up to 1,864 miles (3000km) from China's coastline.†[99] OTH radars are reported to have been deployed along China's coast since at least 2010.[100] In addition, radar detected on Chinese-occupied features in the Spratlys—including Subi Reef, Fiery Cross Reef, Cuarteron Reef, and Mischief Reef—are probably over-the-horizon; they would play a crucial role in enabling the PLA to detect and track U.S. and allied forces between the first and second island chains.[101]
- *Air C4ISR:* The PLA has increased the number of special mission aircraft and uncrewed aerial vehicles (UAVs) that have ex-

*China's use of buried fiber-optic cables may be more secure from remote signals intelligence and less susceptible against electromagnetic and radiofrequency weapons and jamming. Carlo Kopp, "Advances in PLA C4ISR Capabilities," *Jamestown Foundation,* February 18, 2010.

†According to the U.S. Army Training and Doctrine Command, China's OTH radar is used to detect low-altitude penetrating bombers and has early warning ability against intercontinental ballistic missiles and other long-range platforms. U.S. Army TRADOC, *Type SLR-66 Chinese Over-The-Horizon (OTH) Radar*.

tended the PLA's line of sight and improved its airborne early warning and control (AEW&C) and signals intelligence (SIGINT) capabilities.* [102] The PLA Air Force and PLA Navy together are estimated to operate 52 AEW&C aircraft, including the KJ-200, KJ-500, and Y-8J.[103] Mr. Dahm points to commercial satellite imagery revealing new special mission aircraft that have appeared at PLA airfields, including the KJ-500 AEW&C aircraft, KQ-200 anti-submarine warfare/maritime patrol aircraft, and Y-9JB signals and electronic intelligence aircraft.[104] These special mission aircraft provide C4ISR support to PLA Air Force and PLA Navy operations and have been flying beyond the first island chain and operating from China's artificial features in the South China Sea.[105] For example, in January 2024, the KJ-500 early warning aircraft likely tested the performance of its radar and sensors to support J-15 carrier-based fighter jets and J-11B land-based fighter jets to track targets and support their long-range air-to-air fires during a live-fire exercise over the South China Sea.[106] In March 2022, then U.S. Pacific Air Force Commander Kenneth Wilsbach reportedly noted the KJ-500's important role in supporting the PLA's fifth-generation J-20 fighter and the need for U.S. forces to interrupt the kill chain for long-range air-to-air missiles.[107]

- *Maritime C4ISR:* The PLA has developed several platforms to conduct C4ISR in the maritime domain. These platforms include surface combatant ships that are equipped with radars, sensors, and sonars, such as the new Type 055 Renhai guided-missile destroyer.[108] Mr. Dahm notes that PLA Navy warships operating in areas beyond the first island chain to the South China Sea, the Gulf of Aden, and Southwest Asia conduct long-range maritime ISR that could provide indications and warning of U.S. or allied movements.[109] The PLA Navy also has a variety of platforms to track enemy submarines, such as the Z-20 shipborne ASW helicopter, KQ-200 ASW/maritime patrol aircraft, and surface combatant ships equipped with variable-depth sonars and towed array sonar systems.[110]
- *Space-based C4ISR:* The PLA has improved its space-based C4ISR capabilities by increasing its numbers of on-orbit satellites that provide remote sensing,† signals and electronic intelligence, and communications capabilities.[111] Between 2020 and 2024, the PLA doubled its ISR satellites in geostationary orbit; between 2018 and 2024, it tripled its ISR satellites in low Earth orbit.‡ [112] The PLA is estimated to have 92 ISR satellites and 81 electronic intelligence/SIGINT satellites in orbit.[113]

*These special mission aircraft can also conduct electronic attack (jamming) capabilities. J. Michael Dahm, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 27.

†Remote-sensing capabilities of these satellites include electro-optic, hyperspectral, infrared imaging, and synthetic aperture radar. J. Michael Dahm, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 27.

‡To illustrate China's urgency to develop this capability, 76 percent of China's 213 low Earth orbit satellites have been launched since 2021. J. Michael Dahm, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 27.

General Stephen Whiting, commander of U.S. Space Command, stated in written testimony for the U.S. Senate Armed Services Committee in February 2024 that China's advances in its space capabilities increase its ability to monitor, track, and target U.S. and allied forces both on the ground and on orbit.[114] Mr. Dahm notes that China is reportedly one of the only countries with electro-optic imaging satellites in geostationary orbit that can provide "persistent imagery coverage across most of the Indo-Pacific to detect U.S. and allied ships," though these images are likely to be low in resolution due to the satellites' distance from the Earth and atmospheric conditions.[115] Other Chinese satellites launched into geostationary orbit, such as the *Ludi Tance-4 01* (Land Exploration-4 01) synthetic aperture radar (SAR), can reportedly collect 20-meter-resolution images in all weather conditions, allowing China to more effectively detect and track U.S. ships at sea.[116]

The PLA's Counter-C4ISR Efforts

The PLA could use its advances in directed energy weapons, anti-satellite capabilities, and other counterspace technologies to threaten the United States' C4ISR networks and use of the space domain in peacetime or in a counter-intervention scenario.[117] There is some public evidence that the PLA views researching and developing such counter-C4ISR capabilities as an important way to respond to the emergence of commercial satellite providers and their contracting relationships with DOD.* For example, in May 2022, PLA researchers from the Beijing Institute of Tracking and Telecommunications—affiliated with the now disbanded PLA Strategic Support Force—called for the development of anti-satellite capabilities such as microwave technology that can jam communications to disrupt the functions and operating systems of satellite constellations like SpaceX's Starlink.†[118] Following a December 2022 announcement that SpaceX would be partnering with DOD to provide technology and launch capability—called Starshield—to support national security efforts, PLA researchers assessed that Starshield satellites could make it difficult for PLA military operations to elude U.S. monitoring.[119] According to a Reuters review of almost 100 articles in more than 20 Chi-

*Examples of counter-C4ISR capabilities include the use of camouflage, denial, attack, or deception activities that could negatively impact the United States and allied forces' ability to sense and target PLA forces. For instance, actions may also include electronic warfare, cyber attacks, and other physical or nonphysical destruction or disruption of adversary networks, ISR platforms, and command nodes. One article published in the *PLA Daily* by the Political Work Department of the PLA's Northern Theater Command likened adversary ships, naval platforms, and combat aircraft whose access to C4ISR networks had been disrupted to "headless flies." J. Michael Dahm, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 4, 17; Wang Ning, "Seizing Information Control Is Key to Taking the Initiative on the Battlefield" (夺取制信息权是掌握战场主动权的关键), *China Military Online*, November 2, 2016. Translation.

†The PLA has also been paying close attention to the effective use of constellation satellite networks in warfare, such as Starlink, which have been used to secure the communications of Ukraine's military amid attacks by Russia. PLA researchers have reportedly noted how Starlink services could support U.S. military operations and provide ISR capabilities around Taiwan. *Kyodo News*, "China Wary of SpaceX's Starlink Service during Taiwan Contingency," *ABS-CBN News*, May 26, 2024; Eduardo Baptista and Greg Torode, "Insight: Studying Ukraine War, China's Military Minds Fret over U.S. Missiles, Starlink," *Reuters*, March 7, 2023.

The PLA's Counter-C4ISR Efforts—*Continued*

nese defense journals, in one of the articles PLA researchers expressed urgency for China to develop its own similar satellite network while developing other capabilities to shoot down or disable Starlink satellite systems.[120] This concern has accelerated China's development of its own constellation satellite network as well as capabilities to attack or deny U.S. space programs.[121] In a counter-intervention scenario, the PLA would likely engage in "counter-C4ISR" to attack critical nodes of the United States' own C4ISR systems, such as satellites, in order to thwart a potential U.S. and allied military advance.[122]

Electronic Warfare

The PLA has developed substantial EW capabilities to detect, target, and disrupt U.S., allied, and partner forces operating in the Indo-Pacific.[123] In the event of a Taiwan contingency, the PLA could expect the United States to field unmanned submarines, unmanned surface ships, aerial drones, next-generation aircraft and ships equipped with advanced sensors, radars, and precision-guided munitions to target China's invasion force.[124] In preparation for such a contingency, experts assess that China's developed EW capabilities would present a significant challenge to U.S. forces by disrupting the data links and communications U.S. and allied forces need to operate during conflict.[125] In October 2023, a senior U.S. defense official indicated the PLA anticipates needing to be better prepared to operate in a complex electromagnetic environment and continues to try to improve its EW capabilities.[126] In his testimony to the Commission, Mr. Dahm argued that the PLA has invested in EW capabilities that exceed those of the Russian military and even potentially those of the U.S. military.[127]

The PLA's EW capabilities include offensive and defensive capabilities that disrupt an enemy's equipment or protect PLA weapons systems from enemy attack.[128] In addition, the PLA considers how EW can be employed as a deception strategy by concealing real signals and injecting false information to mislead adversary operators and decision-makers.[129]

- *Electronic attack (EA) capabilities:* The PLA uses electromagnetic or directed energy to disrupt an adversary's electronic information systems, or it uses anti-radiation missiles, high-energy lasers, and electromagnetic pulse weapons to directly damage their equipment.[130] These EA capabilities mostly correspond to ground-based and road-mobile electronic countermeasures brigades.*[131] The PLA Air Force, PLA Navy, and PLA Rocket Force each operate electronic countermeasures brigades that provide both electronic support (e.g., intelligence) and EA capabilities

*An example of ground-based jamming equipment was reported in April 2018, when China installed the equipment on Mischief Reef in the Spratlys. Michael R. Gordon and Jeremy Page, "China Installed Military Jamming Equipment on Spratly Islands, U.S. Says," *Wall Street Journal,* April 9, 2018.

to the theater commands.*[132] Other capabilities include PLA Air Force EA aircraft such as the new Y-9G that conducts communications jamming. The PLA Air Force currently fields three Y-9G variants and two Y-9XZ variants.†[133] The PLA Air Force also fields at least 12 J-16D PLA radar-jamming EW aircraft with sensors that can determine the position of radar-transmitting devices used to both jam and target adversary radars.[134] In January 2022, two J-16D aircraft were spotted, reportedly for the first time, conducting an exercise alongside 11 other PLA aircraft that entered Taiwan's Air Defense Identification Zone, demonstrating the PLA's intent to conduct EW in a Taiwan contingency.[135] The PLA has also developed anti-radiation weapons designed to destroy radar or communications targets, such as the PLA Air Force YJ-91 anti-radiation missile (ARM) or several new ARMs like the TL-30 (known as the AKF088C) that can reportedly fly and loiter in search for targeted enemy electronic signals.[136] China has sought to improve its ARMs by producing a seeker on the missile that could cover multiple frequency bands and could prioritize targets that are uploaded to the onboard computer from the ground or by pilots while in flight.[137] The PLA has also developed counterspace EA capabilities, such as experimental on-orbit jamming systems and road-mobile satellite jamming facilities and brigades that can potentially conduct non-kinetic attacks on U.S. and allied satellites as a first move in a counter-intervention operation.[138]

- *Electronic protection (EP) capabilities:* China anticipates reciprocal electronic jamming attacks as well as kinetic attacks against its own C4ISR, and it has taken measures to protect its systems. The PLA conducts trainings and exercises to prepare units, such as radar brigades, for an attack or to protect against enemy satellites conducting reconnaissance.[139] EP activities can also involve strategies like "frequency hopping," where a radar or communications system jumps across a preset array of frequencies to make it difficult for enemies to detect and jam.‡[140] The PLA has also built redundancy into its systems, protecting against adversarial actions by developing a joint datalink system that covers a broad range of the frequency spectrum.[141] Mr. Dahm notes that these datalink systems§ are likely resistant to adversarial intercepts and jamming.[142] In effect, the PLA's

*The previous PLA Strategic Support Force operated ground-based electronic countermeasure brigades that likely focused on the air defense of Beijing. In April 2024, China disbanded the Strategic Support Force and created three new military forces: the Military Aerospace Force, the Cyberspace Force, and the Information Support Force. J. Michael Dahm, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 33. For more on the PLA Strategic Support Force reorganization, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review)."

†It is estimated that the PLA Air Force has four electronic warfare regiments, which consist of about 31 electronic warfare aircrafts including the J-16D Flanker, Y-8CB, Y-8DZ, Y-8G, Y-8XZ, Y-9G, and Y-9XZ. International Institute for Strategic Studies, "Military Balance 2024, Chapter Five: Asia," February 12, 2024, 260.

‡Other operational forms of electronic protection to avoid detection include turning off radars and not operating radars in view of enemy satellite collection. J. Michael Dahm, Senior Resident Fellow, *Mitchell Institute for Aerospace Studies*, interview with Commission staff, May 28, 2024.

§The PLA's Joint Information Distribution System is similar to the U.S. Link-16 or Joint Tactical Information Distribution System data link. The system is developed as a frequency-hopping datalink and described by Chinese sources as being capable of connecting army, navy, air force, and satellite communication networks and integrating these service-level tactical data links into

broad range of coverage over the frequency spectrum* increases the challenge for an adversary to jam or destroy enough of the PLA's electronic systems to significantly disrupt its ability to access battlespace-related information.[143] The PLA has also looked to utilize emerging technologies to enhance its electronic protection capabilities to counter U.S. electronic attacks.[144] For instance, as reported in the *South China Morning Post*, a Chinese academic journal titled *Radar and Electronic Counter Measure* examines how AI could help the PLA Navy's radar counter the U.S. Navy's EA-18G Growler's electromagnetic jamming.[145]

The PLA's investments in a diversity of EW capabilities has likely improved its ability to operate in a complex electromagnetic environment.[146] It continues to emphasize combat training in such an environment; in January 2024, a naval brigade of the Southern Theater Command simulated targeting and countering enemy aircraft anti-jamming methods.[147] Mr. Dahm notes it is unclear based on open source research how the PLA's EA capabilities may fare against advanced and hardened U.S. military systems equipped with electronic protection capabilities.[148] Comparing the United States' and China's EW systems, it is likely that the U.S. Navy EW aircraft, the EA-18G Growler, is qualitatively better than any jammer, such as the Y-9G, in the PLA inventory.[149] That said, Mr. Dahm assesses that the diversity found in PLA air-to-air weapons, naval radars, surface-to-air missile radars, and early warning radars poses significant challenges for the U.S. military to effectively disrupt all of the PLA systems.[150]

China's Offensive Missile Capabilities

China's continued expansion of its missile force is a critical component of its A2/AD capabilities that could threaten U.S. and allied bases, logistics and port facilities, and other key infrastructure in the Indo-Pacific.[151] Over time, China has increased the number, range, precision, and types of missiles in its arsenal, particularly for medium- and long-range missiles.[152] In 2015, at the start of China's major military modernization reforms, DOD estimated that the PLA had fielded 200–300 medium-range ballistic missiles (with a range of approximately 1,500 kilometers (km) (930 miles [mi]) with 100–125 launchers; as of 2023, the PLA had reportedly deployed 1,000 medium-range ballistic missiles and 300 launchers.[153] Similarly, in 2018, DOD published for the first time its estimate that the PLA had deployed 16–30 intermediate-range ballistic missile (IRBMs), with a range of approximately 3,000–4,000 km (1,900–2,500 mi) with 16–30 launchers; as of 2023, DOD assessed that the PLA had 500 IRBMs and 250 launchers.[154] The large quantity of longer-range IRBMs also enables the PLA to extend the distance and frequency

a single joint network. J. Michel Dahm, "Inter-Island Communications," *Johns Hopkins Applied Physics Laboratory,* July, 2020, 10–11.

*The PLA's coverage over the frequency spectrum includes ground-based radars employed for ISR ranging from high-frequency (HF) skywave OTH to very-high-frequency (VHF); ultra-high frequency (UHF); and L-, S-, C-, and X-band radars. J. Michael Dahm, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 34; J. Michael Dahm, "South China Sea Military Capability Series: Air and Surface Radar," *Johns Hopkins Applied Physics Laboratory*, 2020, 2–21.

of its strikes out to the Philippine Sea and beyond, increasing the risks to U.S. and allied forces operating within the second island chain.[155] The PLA has also improved the precision of its missiles, as illustrated in recent exercises targeting moving maritime assets and ground-based assets.*[156] In addition, the PLA has diversified the types of missiles in its arsenal and now has a variety of ballistic and cruise missiles that can strike land-, air-, and sea-based targets.†[157] The PLA has also invested in the development of hypersonic technology and is known to have outfitted the medium-range DF-17 with a hypersonic glide vehicle.[158] The maneuverability of the hypersonic glide vehicle could allow the missile to evade U.S. air and missile defenses.[159] Thomas Shugart, adjunct senior fellow at the Center for a New American Security, also assesses that the PLA's greater quantity of anti-ship ballistic missiles will enable it to strike not only high-value targets like large and medium-size ships (such as U.S. aircraft carriers) but also smaller groups or warships (such as logistics ships).[160]

Competency of China's missile forces is difficult to determine. Some Chinese military analysts project confidence that its missile force is formidable enough to counter changes in the U.S. force posture in the region. Ms. Kivlehan-Wise highlights writings by a retired PLA officer that claim China's long-range missiles and warfighting capabilities in the air domain would render any U.S. attempts to create an "outpost on the first island chain… impossible."[161] Even so, recent corruption charges and the rare admission of shortcomings in the political oversight‡ of training conducted by the PLA's Rocket Force units—reported in 2023—suggests a potential deficiency in the force's combat readiness.[162] (For more on corruption investigation within the PLA Rocket Force and the Equipment Development Department, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).")

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*For example, in May 2023, the PLA conducted a joint exercise about 740 km northwest of Guam involving the PLA Rocket Force and the PLA Navy's Shandong aircraft carrier group that reportedly illustrated its capacity to target moving surface ships and naval bases beyond the first island chain. In 2020, the PLA also conducted a live-fire exercise where it launched DF-21 and DF-26 ballistic missiles and successfully hit a moving ship in the South China Sea. International Institute for Strategic Studies, "Military Balance 2024, Chapter Five: Asia," February 12, 2024, 220; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2023,* October 19, 2023, 67; Minnie Chan, "China Says PLA Rocket Force Joined Shandong Carrier Group in Drills near US Base in Western Pacific," *South China Morning Post*, May 10, 2023; Kristin Huang, "China's 'Aircraft-Carrier Killer' Missiles Successfully Hit Target Ship in South China Sea, PLA Insider Reveals," *South China Morning Post,* November 14, 2020.

†China has developed robust anti-ship ballistic missiles (ASBMs) with an estimate of over 140 DF-26s and approximately 30 DF-21Ds. It has also developed air-launched land attack cruise missiles (LACMs) such as the CJ-20, air-launched antiship cruise missiles (ASCMs) such as the YJ-12 and the YJ-18, and sea-launched land attack cruise missiles and sea-launched antiship cruise missiles that can target U.S. and allied military forces on fixed bases in the Indo-Pacific as well as on moving air and maritime assets operating within the region. International Institute for Strategic Studies, "Military Balance 2024, Chapter Five: Asia" February 12, 2024, 254; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2023*, October 19, 2023, 66–67; Jordan Wilson, "China's Expanding Ability to Conduct Conventional Missile Strikes on Guam," *U.S.-China Economic and Security Review Commission*, May 10, 2016, 8–11.

‡A September 2023 *PLA Daily* article details the importance of bolstering unit-level political commissar work to oversee the implementation of reforms and training by PLA Rocket Force units. *Reuters,* "China's Military Rocket Force Uncovers 'Shortcomings,' PLA Daily Reports," September 15, 2023; Yang Shaotong and Yang Lun, "The Party Committee of a Certain Rocket Force Conducted an In-Depth Investigation and Study to Solve Problems in the Development of the Army" (火箭军某部党委深入调查研究解决部队发展难题), *PLA Daily*, September 15, 2023. Translation.

China's Logistics and Maintenance Sustainment Capabilities Improve, but Challenges Remain

The PLA views logistics support functions as a key requirement for winning wars and has sought to transform its decentralized logistics system to a more centralized hub-and-spoke system that better enables joint operations.[163] In order to sustain the PLA's offensive campaigns in a Taiwan scenario (such as blockades, joint firepower strike, and island landing operations), the PLA would require extensive logistics support to transport material and oil supplies, conduct infrastructure protection, and enable the maintenance of war material reserves.[164] The PLA has spent more than two decades adjusting its approach to logistics to respond to contingencies more quickly and efficiently and with greater capacity.[165] These measures include the following:

- Under the 2016 military reforms initiated by General Secretary Xi, the PLA created the Joint Logistics Support Force with the intent to improve the management of its logistics and equipment support system across the theater commands.[166]
- The PLA has continued to conduct exercises and training focused on improving its joint logistics capability across theater commands.*[167] These exercises and training appear to focus on preparing for situations in which PLA logistics are targeted in a conflict.[168] For instance, in August 2023, the Eastern Theater Command Air Force conducted runway repair drills and training to improve its ability to recover following enemy strikes.[169]
- The PLA has conducted airfield renovations, expanded taxiways, developed new shelters for aircraft, and updated fuel and munitions storage.†[170]
- For the PLA Navy, the service has been developing replenishment platforms such as auxiliary replenishment oilers and has been practicing the transfer of missile systems while underway at sea.[171] For example, the PLA Navy's Zhanlan far seas training exercise in 2020 focused on combat support to sustain limited offensive strikes at sea and featured the first known case of the PLA Navy training on transferring ordnance while underway outside the first island chain, including replenishment of torpedoes using a helicopter.[172]
- The PLA is also investing in new technologies such as AI, autonomous vehicles, big data, cloud computing, data mining technology, Internet of Things, 5G mobile communications, and

*Kevin McCauley, an independent analyst, assessed in 2022 that extensive logistics exercises and training to ensure the PLA's successful execution of complex and difficult logistics support plans for a large-scale joint landing operation had not appeared to have taken place thus far. Kevin McCauley, "Logistics Support for a Cross-Strait Invasion," *U.S. Naval War College, China Maritime Studies Institute, China Maritime Report No. 22*, July 2022, 1.

†According to Eli Tirk, research analyst at the China Aerospace Studies Institute, these updates of hardened storage facilities and the expansion of munition storage occurred at airfields within the Eastern Theater Command that could improve the PLA's combat abilities in a Taiwan contingency. Mr. Tirk also assesses that in a contingency involving a large-scale PLA air combat operation conducting a blockade of Taiwan, the airfields within and around 600 miles of Taiwan in the Eastern Theater Command and Southern Theater Command would allow the PLA to operate over and around Taiwan for longer periods of time while enabling aircraft on longer-range sorties conducting counter-intervention operations to refuel and rearm. Eli Tirk, "PLA Capability to Sustain Air Combat Operations," *U.S. Army War College*, February 2023, 147.

other automatic identification technologies to enhance precision logistics that could improve decision-making for PLA commanders.[173]

Despite efforts to improve its logistics capabilities, however, the PLA continues to face a range of challenges that could limit its effectiveness in combat.

- The continuous reorganization of the PLA's logistics forces has led to internal frictions, complex coordination issues, and difficult command issues that hold implications for response time and efficiency of wartime logistics support.[174]
- The PLA may lack sufficient logistics capabilities required to successfully support a large-scale amphibious landing on Taiwan, and countering a foreign military response would add additional strain on the PLA's logistics assets.[175] According to Kevin McCauley, an independent analyst, the PLA's All Army Logistics Academic Research Center's writings reflect concerns that a U.S. military response could disrupt the PLA's logistics operations through missile strikes or information attacks.[176]
- The PLA also faces maintenance challenges. In written testimony to the Commission, Cristina Garafola, policy researcher at the RAND Corporation, argued that shortcomings in the PLA's maintenance management system* could present key challenges to China's logistics performance during high-end combat.[177] Ms. Garafola similarly noted that the PLA's rapid force modernization combined with its lack of recent combat experience means its maintenance systems could struggle to conduct battlefield repair of high-technology weapons and equipment.†[178] For example, she identified maintenance challenges that could result in degraded performance for advanced platforms such as the J-20 fighter jet and the maritime and naval assets on features in the South China Sea.[179] A second element is insufficient training for the personnel within the PLA's logistics system who are tasked with maintaining important weapons platforms and other equipment.[180] Ms. Garafola also identified low morale and ad hoc practices across the services as key vulnerabilities that could compromise the PLA's ability to maintain its growing suite of weapons systems under battlefield conditions.‡[181] In a high-intensity conflict, any limitations in PLA maintainers' ability to service increasingly advanced maritime and air assets could have operational effects on PLA war-fighting performance,

*The PLA's maintenance management system is a component of the logistics and sustainment activities but separate from the Joint Logistics Support Force command structure. Cristina Garafola, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 1, 9.

†The 2020 *Science of Military* Strategy highlights that the task of equipment maintenance has become more "onerous" and cites the potential for higher failure rates in new weapons and equipment not tested under combat conditions. China Aerospace Studies Institute, *In Their Own Words: Science of Military Strategy 2020*, January 2022, 443.

‡For example, a *PLA Daily* article reveals the lack of an institutionalized approach for highly skilled maintainers to pass on their knowledge to the unit prior to retirement. Cristina Garafola, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter-Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 7; Jia Baohua, Yang Lei, and Xiang Shuangxi, "Compiling an 'Encyclopedia' for Equipment Maintenance" (为装备维修编制'百科全书'), *PLA Daily*, April 5, 2018. Translation.

such as low platform availability rates, reduced sortie generation, or degraded platform performance.[182]

- The PLA may also face shortages of supplies close to the location of a potential conflict. PLA experts assess that its war material reserves, including the stockpiling of oil, equipment parts, and munitions, need to be strengthened along its frontline tactical areas, such as China's coastline across from Taiwan.[183] Compounding this potential shortage of supplies near the vicinity of the conflict are uncertainties about the PLA's capability to respond quickly and move large quantities of supplies throughout the country.* (For more on China's stockpiling efforts, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience.")

U.S.-Allied Efforts to Address Challenges from China's Military

U.S. alliances represent a critical part of the United States' approach to pursuing security and advancing stability in the Indo-Pacific region, including responding to threats from China's counter-intervention capabilities. Christopher Johnstone, senior adviser and Japan Chair at the Center for Strategic and International Studies, argued in his testimony before the Commission that U.S. alliances in the Indo-Pacific represent a "foundational strength for the United States" both for the access they provide and for the capabilities they bring to the table.[184] Allies' provision of basing, rotational, or other access enables a routine U.S. military presence and ensures that the United States is able to respond quickly to a crisis.[185] Alliances can potentially reinforce deterrence by complicating Beijing's decision-making, since they increase the likelihood that a conflict will involve more military actors than the United States.[186]

There are prospects for increased allied cooperation in the face of China's counter-intervention capabilities. In addition to the common values and strategic interests underlying these alliance commitments, the United States and its Indo-Pacific allies increasingly share similar concerns about the implications of China's military capabilities and objectives.[187] There nevertheless remain differences in the specific activities each country might be willing to participate in or to support, driven by differences in political will and the capabilities of their militaries.

U.S. Defense Industrial Base Challenges

A robust and resilient U.S. defense industrial base is crucial for the sustainment of U.S. strategic competition in peacetime and surge capacity in wartime. The U.S. defense industrial base faces acute challenges brought by an evolving strategic environ-

*There have been few recent events by which to judge the PLA's current capacity for rapid mobilization. However, some observers pointed to this as an area of challenge during the 2008 Sichuan earthquake and the PLA's response to the outbreak of COVID-19 in 2022. Elsa Kania and Ian Burns McCaslin, "People's Warfare against COVID-19: Testing China's Military Medical and Defense Mobilization Capabilities," *Institute for the Study of War,* December 2020, 25*;* Joel Wuthnow, "Responding to the Epidemic in Wuhan: Insights into Chinese Military Logistics," *Jamestown Foundation*, April 13, 2020*;* Jake Hooker, "Quake Revealed Deficiencies of China's Military," *New York Times*, July 2, 2008.

U.S. Defense Industrial Base Challenges—*Continued*

ment that has placed strain on U.S. policies and investments, a limited workforce, and inadequate domestic production.[188] Some problems currently facing the defense industrial base include a high reliance on a small number of contractors for critical defense capabilities; supply chain difficulties; challenges identifying, recruiting, and retaining talent; and complex and protracted procurement procedures.[189] These issues within the U.S. defense industrial base contribute to challenges and delays in supplying not only the U.S. military but also U.S. allies and partners.[190] One area of particular concern is the U.S. capacity to keep up with surging demand for munitions in a conflict scenario.[191] For instance, high consumption rates and dwindling stockpiles would compound existing limitations on production capacity caused by previous low demand signals for munitions.[192] In April 2023, the *Wall Street Journal* reported that plans to increase production of key munitions, such as mortar shells, artillery rounds, and Tomahawk missiles, have been marred by a shortage of chips, machinery, and skilled workers.[193] U.S. experts have also found that the U.S. military is not buying enough munitions, threatening the ability to meet the requirements of future conflicts and making it more difficult to sustain production lines.[194] Mackenzie Eaglen, senior fellow at the American Enterprise Institute, assessed that the U.S. Navy likely has an inadequate supply of Tomahawk Land Attack Missiles, as lackluster procurement does not offset current expenditure rates.*[195] In testimony before the Commission, witnesses suggested that increased cooperation with allies such as Japan and Australia may offer one pathway for ameliorating capacity shortfalls in shipbuilding and maintenance or munitions production; however, operationalizing such cooperation would still require substantial investment in joint capabilities.[196] In a step to enhance cooperation with allies in addressing defense industrial base vulnerabilities, the United States announced that it is launching the Partnership for Indo-Pacific Industrial Resilience with 12 of its allies and partners in the Indo-Pacific and Europe, including Taiwan, in order to fast-track production of weapons systems.[197] (For more on U.S.-Taiwan defense cooperation, see Chapter 9, "Taiwan.")

Indo-Pacific Allies' Geography Is a Major Asset for the U.S. Military

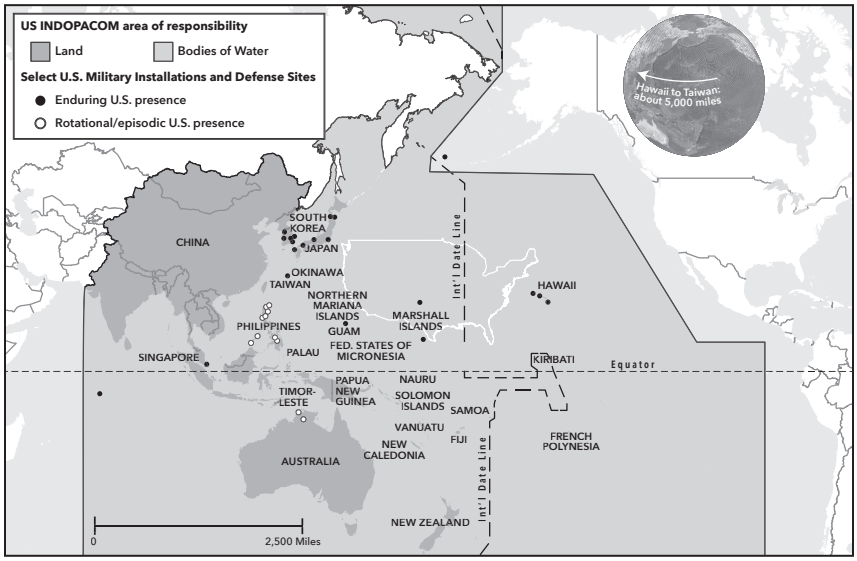
Geographic access from Indo-Pacific alliances is an important element of U.S. military posture† in the Indo-Pacific region. According

*As an example, the U.S. Navy stated it expended more than 80 Tomahawks on the opening day alone to strike targets within Yemen. Ms. Eaglen points out that in 2023, the entire Tomahawk purchase of 55 missiles accounted for 68 percent of the precision munitions fired at the Houthis in one day, a rate of expenditure that is unsustainable. Mackenzie Eaglen, "Why Is the U.S. Navy Running Out of Tomahawk Cruise Missiles?" *American Enterprise Institute*, February 13, 2024.

†Military posture refers to the positioning and organization of military forces and facilities and may also refer to international military agreements. Luke A. Nicastro and Ilana Krill, "FY2024 NDAA: U.S. Military Posture in the Indo-Pacific," *Congressional Research Service* IN12273, October 30, 2023, 1.

to DOD's 2022 National Defense Strategy,* a focus for U.S. military force posture is "the access and warfighting requirements that enable [U.S.] efforts to deter PRC [People's Republic of China] and Russian aggression, and to prevail in conflict if deterrence fails."[198] According to then Commander of U.S. Indo-Pacific Command Admiral John C. Aquilino in April 2023, implementing the objectives of the 2022 National Defense Strategy requires the U.S. military to maintain a "persistent, lethal, and integrated" joint force west of the International Date Line.[199] The majority of U.S. defense sites west of the International Date Line are located in host countries, including some that are operated by DOD (such as in Japan and South Korea), and others that are used by DOD but owned and operated by the host country (such as in the Philippines, Australia, and Singapore) (see Figure 1).[200] U.S. Army, Navy, Marine Corps, and Air Force installations at these sites support a range of actions and capabilities, including missile detection and defense, logistics support, training, and exercises.[201]

Figure 1: Select U.S. Military Installations and Defense Sites in the Indo-Pacific



Source: Adapted from Caitlin Campbell, Cameron M. Keys, and Luke A. Nicastro, "U.S. Indo-Pacific Command (INDOPACOM)," *U.S. Congressional Research Service* CRS IF 12604, March 5, 2024, 2.

Japan's geography and permanent basing of U.S. forces make it an extremely important ally for a China contingency. Its strategic location on the first island chain means that one of the PLA's shortest passages into the Pacific brings it between Japan's Southwest Islands and Taiwan.[202] Japan plays a critical role in U.S. force posture

*The 2022 National Defense Strategy lays out how the U.S. military plans to address threats to vital U.S. national security interests. It directs DOD to "act urgently to sustain and strengthen U.S. deterrence" with China as the pacing challenge. U.S. Department of Defense, *2022 National Defense Strategy of the United States of America*, 2022, 111.

through the permanent basing of U.S. military personnel.* More U.S. service members are permanently stationed in Japan than in any other foreign country,† with this forward deployment serving the strategic goal of protecting regional security and increasing deterrence against China.[203] In his testimony before the Commission, Mr. Johnstone described the alliance with Japan as "the foundation of [U.S.] power projection in the region" because of the critical U.S. military capabilities stationed there.[204] The country hosts U.S. Army, Navy, Marine Corps, and Air Force installations, with installations on the Japanese island Okinawa (in the southwest) providing close access to Taiwan and the South China Sea.[205] Japan is also the location of the forward-deployed Ronald Reagan carrier strike group.[206]

The Philippines' geography and rotational hosting of U.S. forces grants potential access to both the South China Sea and the Taiwan Strait. Gregory Poling, senior fellow and director of the Southeast Asia program and Asia Maritime Transparency Initiative at the Center for Strategic and International Studies, argued in 2023 that "there is no contingency in the South China Sea that does not require access to the Philippines."‡[207] Its position in the first island chain also means that one of the PLA's shortest passages into the Pacific is through the Luzon Strait, which lies between Taiwan and the Philippines.[208] U.S. armed forces have a rotational presence at nine bases in the Philippines, governed by the Visiting Forces Agreement (VFA) of 1999§ and the EDCA agreement.[209] EDCA allows the United States to fund infrastructure upgrades, preposition military equipment, and rotate forces through select Philippine military bases for the benefit of both countries.[210] The 2023 EDCA expansion included one new site near the Spratlys that could facilitate U.S. assistance to the Philippines in the South China Sea and three facing north toward Taiwan that could facilitate U.S. military operations in the event of a Taiwan contingency.¶[211] Edcel Ibarra, assistant professor at the University of the Philippines Diliman, stated in his testimony for the Commission that if allowed by the Philippine gov-

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*The *Status of Forces Agreement (1960)* delineates the legal status of U.S. service personnel in Japan and the facilities and areas granted to the United States to use. U.S. Department of State, Bureau of Political-Military Affairs, *U.S. Security Cooperation with Japan*, January 20, 2021.

†As of 2024, there were 85 U.S. military facilities, and as of 2023, there were approximately 62,802 U.S. military personnel. As of 2021, thousands of DOD civilians and family members lived in Japan. Lindsay Maizland and Nathanael Cheng, "The U.S.-Japan Security Alliance," *Council on Foreign Relations*, May 3, 2024; U.S. Department of State, Bureau of Political-Military Affairs, *U.S. Security Cooperation with Japan*, January 20, 2021.

‡Mr. Poling also assesses that U.S. military access from the Philippines and rotational access of key U.S. capabilities at EDCA sites could offer one of very few feasible avenues for contending with China's military bases in the South China Sea. Gregory Poling, "The Conventional Wisdom on China's Island Bases Is Dangerously Wrong," *War on the Rocks*, January 10, 2020.

§The Visiting Forces Agreement (VFA) (1999) establishes the legal basis for the presence of U.S. Armed Forces personnel visiting the Philippines. In February 2020, then Philippine President Rodrigo Duterte announced the cancelation of the VFA, but after several subsequent announcements suspending this cancelation and a meeting between President Duterte and U.S. Secretary of Defense Lloyd Austin, the agreement was fully restored in July 2021. Andrea Chloe-Wong, "Duterte's Back-Down on US Forces in Philippines," *Interpreter*, August 24, 2021; U.S. Department of Defense, *Philippines President Restores Visiting Forces Agreement with U.S.*, July 30, 2021; Idrees Ali and Karen Lema, "Philippines' Duterte Fully Restores Key U.S. Troop Pact," *Reuters*, July 20, 2021.

¶Original EDCA sites included Antonio Bautista Air Base in Palawan, Basa Air Base in Pampanga, Fort Magsaysay in Nueva Ecija, Benito Ebuen Air Base in Cebu, and Lumbia Air Base in Mindanao. The new sites identified in 2023 are Naval Base Camilo Osias in Sta Ana and Lal-lo Airport, both in Cagayan Province; Camp Melchor Dela Cruz in Gamu, Isabela Province; and the island of Balabac off of Palawan. Gregory B. Poling, "The U.S.-Philippine Alliance's Very Busy Month," *Center for Strategic and International Studies*, April 12, 2023; Karen Lema, "Philippines Reveals Locations of 4 New Strategic Sites for U.S. Military Pact," *Reuters*, April 3, 2023.

ernment or if mutual defense obligations are triggered, the alliance provides a strategic location for forward deployment of U.S. military forces and for military logistics.[212]

Australia's geography and rotational hosting of U.S. forces provide additional benefits for the U.S. military in countering the PLA in the Indo-Pacific.* Its location provides military access to both the Pacific and Indian Oceans, close enough to China to influence the military environment in places like the South China Sea but outside the first and second island chains, where China's counter-intervention capabilities are strongest.[213] Bec Shrimpton, director of defense strategy and national security at the Australian Strategic Policy Institute, argued in her testimony for the Commission that Australia's large size and distance from China make it less vulnerable as a potential forward location for U.S. forces than positions in other allied states or Guam.[214] She also assessed that "in a crisis or early stages of a conflict, Australia would be seen as sensible location to disperse/repair/sustain [U.S.] forward-deployed forces, and as an obvious hub from which to flow in supplies, reinforcements and long-range strike assets."[215] Australian bases host U.S. military forces on a rotational basis, including navy, air force, and marine corps elements for training and exercises.[216]

U.S. Security Partnerships with the Freely Associated States

The United States has strong security partnerships with Palau, the Marshall Islands, and the Federated States of Micronesia that confer benefits in terms of geography and military access. These three Pacific Island countries, collectively known as the Freely Associated States (FAS), maintain a close relationship with the United States through Compacts of Free Association (COFA) agreements.[217] The FAS are located in a strategic region of the Pacific near U.S. territories of Guam and the Northern Mariana Islands and close to other important security partners such as Australia and Papua New Guinea.[218] The agreements these states have established with the United States include defense-related provisions that grant the U.S. military unilateral defense access to an area of the Pacific Ocean broader than the continental United States.[219] The agreements also allow the United States to deny military access to third countries such as China.[220] Experts assess that the access afforded by these agreements forms a critical part of the current U.S. defense posture in the Pacific.[221] According to Kathryn Paik, senior fellow and Australia chair at the Center for Strategic and International Studies and a previous director for Southeast Asia and the Pacific on the National Security Council, "Every contingency you can imagine

*The Agreement Concerning the Status of United States Forces in Australia (SOFA) (1963) lays out the legal status of U.S. Armed Forces personnel in Australia. Australian bases host U.S. military forces on a rotational basis, including rotational navy, air force, and marine corps elements for training and exercises, U.S. Air Force bombers, and the rotational U.S. Marine Air Ground Task Force Marine Rotational Force-Darwin. Bec Shrimpton, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 7–8; U.S. Department of State, Bureau of Political-Military Affairs, *U.S. Security Cooperation with Australia*, September 14, 2021.

U.S. Security Partnerships with the Freely Associated States—*Continued*

in the Pacific—Korea, Taiwan—everything, depends on [those] assumptions of defense access."[222] These countries also host some U.S. Army installations used for missile defense activities.[223]

Chinese sources recognize the strategic value of these security partnerships for the United States. Some Chinese state media reporting on the renewal of the COFA agreements has emphasized the strategic and military significance of these agreements for the United States, and China's Ministry of National Defense spokesperson criticized the renewal as the United States trying to turn the region into a "boxing ring."[224] A 2023 article describes these Pacific Island states as "marine and aerial channels for the [United States] to deploy troops" in the Western Pacific, makes note of U.S. military deployments on their territories, highlights their potential service as "logistics replenishment bases," and speculates that they will function as alternatives to the U.S. base in Guam.[225] Another article claims the United States seeks to "build these three countries into its forward bases against China."[226] These articles ignore the agency and sovereign choices of the FAS in continuing their relationships with the United States, grossly mischaracterizing the United States as "binding" them into its service and using "coercion" to "tie them to its anti-China chariot."[227]

Japan's Perspectives on Addressing Threats from China's Military

China's aggressive military actions in the region, coupled with the rapid buildup of the PLA's offensive military capability, present a growing security threat to Japan.[228] In Japan's 2022 National Security Strategy, China is described as the "greatest strategic challenge" to peace and security, a departure from its 2013 National Security Strategy that referred to China's "external stance and military activities" as an "issue of concern."[229] Tokyo's concern of advances in missile-related technologies in its surroundings has motivated recent efforts to upgrade its defense capabilities, especially its counterstrike capabilities, and to deepen defense cooperation with the United States and other partners.[230] Japan is likely to determine that supporting U.S. efforts in a conflict is in its interests, although the degree and type of support are not yet determined.

Japan Perceives Imminent Threats from China's Military, Including over Taiwan

Japan's policymakers are highly concerned that China's security objectives vis-à-vis Taiwan present a threat to their country, according to official reports and research conducted during the Commission's June 2024 fact-finding trip to Tokyo.[231] Due to its proximity to China, Japan would be at the forefront of any military conflict within the first island chain, particularly a war over Taiwan.[232] Three high-level policy documents from Japan's Ministry of Defense in 2021 and 2022 highlight China's "intensifying" military activities

in the sea and air around Taiwan among Tokyo's chief security concerns in the Indo-Pacific, with one of the 2022 documents describing stability around Taiwan as something "critical for Japan's security [which] must be closely monitored with a sense of urgency."[233] Ministry of Defense policy documents and nongovernment experts have also frequently referenced China's military response to then U.S. Speaker of the House Nancy Pelosi's visit to Taiwan in August 2022—during which the PLA conducted live-fire exercises and five ballistic missiles fell into Japan's exclusive economic zone (EEZ)—as a particularly salient indicator of this threat.[234] In his written testimony to the Commission, Tetsuo Kotani, professor at Meikai University and senior fellow at the Japan Institute of International Affairs, argued that China's bellicose military response to then Speaker Pelosi's visit demonstrated a "real possibility that Japan would be directly involved in a Taiwan contingency."[235]

Tokyo is similarly concerned about China's aggressive military presence elsewhere in the region. In 2019, a Ministry of Defense-produced white paper, "Defense of Japan," noted that the PLA Navy and Air Force had "expanded and intensified their activities in the surrounding sea areas and airspace of Japan," seeking to desensitize its neighbors to increased PLA presence in the region.[236] Furthermore, its 2022 National Defense Strategy notes China "intensifying its activities across the entire region surrounding Japan," including the East China Sea, Sea of Japan, western Pacific Ocean, South China Sea, and into the second island chain.[237] The Ministry also released detailed documentation highlighting the PLA's expanding activities in the maritime and air domains in the Sea of Japan, around its main island, its southwestern islands, and the Japanese-administered Senkaku Islands.[238] Japan's Self-Defense Force has also frequently referenced its need to contend with an increase in joint Chinese and Russian military activities operating near its territory.*[239]

Finally, Japan perceives China's ongoing military modernization as a threat because it enables China's aggressive military posture. Tokyo's 2022 National Defense Strategy highlighted advancements in China's military modernization that have improved China's A2/AD military capabilities in the surrounding area, directly threatening Japan.[240] For example, the Strategy pointed out that China now possesses larger numbers of modern naval and air assets and has built a large arsenal of intermediate- and medium-range missiles, anti-ship ballistic missiles, long-range land-attack cruise missiles, and hypersonic glide vehicles, all of which could strike Japan.†[241]

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*Japan has witnessed the PLA and Russian Navy conduct joint exercises circumnavigating its archipelago and operating near its territory. Japan has also scrambled its Air Self-Defense Force fighters in response to China and Russia's joint bomber flights that have occurred seven times since July 2019 over the Sea of Japan and the East China Sea. Japan's Ministry of Defense, *China's Activities in East China Sea, Pacific Ocean, and Sea of Japan,* March 2024, 2; Tetsuo Kotani, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 2; Dzirhan Mahadzir, "Joint Russia-China Military Flights Prompt Japanese, South Korea Fighter Scrambles," *USNI News*, December 14, 2023; Tsuruta Jun, "Chinese and Russian Warships Step Up Activity in Straits around Japan," *Diplomat*, August 15, 2023; Brad Lendon, "Why Russian and Chinese Warships Teaming Up to Circle Japan Is a Big Deal," *CNN*, October 25, 2021.

†The PLA has conducted training exercises demonstrating the capability to target Japanese and U.S. military bases, aircrafts, and ports in a conflict. For example, commercial satellite images dating back to 2013 appear to show the PLA Rocket Force using ship targets similar in

In 2023, the "Defense of Japan" white paper pointed with particular concern to China's growing number of nuclear warheads, construction of a second indigenous aircraft carrier, and development of a wide variety of UAVs.[242] When referencing expanding PLA capabilities, the Ministry of Defenses' policy documents clearly articulate that this military buildup provides the backing for the aggressive activities threatening Japan.[243] Regarding nuclear weapons specifically, a salient concern in Tokyo is that China's rapid and nontransparent nuclear modernization could undermine the U.S. ability to protect Japan under its nuclear umbrella.*[244]

Japan Seeks to Defend against China's Military Threats

Japan has updated its defense policy to upgrade its defense capabilities, develop counterstrike capacity, and integrate its capabilities across domains.[245] In December 2023, Tokyo raised its defense budget to a record-high $56 billion (7.9 trillion yen), with a plan to increase its defense budget to 2 percent of its gross domestic product (GDP) by 2027.[246] However, the weakening of the Japanese yen may undermine Japan's plans to invest in its military buildup.†[247] Mr. Kotani's testimony to the Commission pointed to Russia's invasion of Ukraine and China's intensifying military activities as factors that drove popular support for dramatic changes to Japan's defense policy.[248] Tokyo's higher defense budget would enable the upgrade of its indigenous standoff missiles as a denial capability; secure sufficient munitions and fuel; and accelerate the procurement of additional Type-12 cruise missiles and Tomahawks,‡ as well as the development of hypersonic guided missiles.[249] According to the 2022 National Security Strategy, developing counterstrike capabilities means that in the event of a missile attack by an opponent, Japan would have the capability to mount an effective counterstrike to prevent further attacks.§[250]

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size to the U.S. Arleigh Burke-class destroyer and a mock port that closely resembled the U.S. naval base in Yokosuka, Japan. Tetsuo Kotani, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners,* March 21, 2024, 4; *Nikkei Asia*, "Satellite Photos Suggest China Training to Attack Japan's Aircraft," May 20, 2022; Thomas Shugart, "Has China Been Practicing Preemptive Missile Strikes against U.S. Bases?" *War on the Rocks*, February 6, 2017.

*Specifically, as Mr. Kotani explained in his testimony, Japan fears that if China's rapid nuclear buildup results in China reaching nuclear parity with the United States, China may become emboldened to initiate a conventional war against its neighbors without fearing a nuclear war with the United States. Tetsuo Kotani, oral testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 194; Tetsuo Kotani, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 2.

†The weakened yen has eroded Japan's government's purchasing power, which, according to Satoshi Morimoto, a former Japanese defense minister, could result in the value of the defense budget being reduced by 30 percent over the next five years. In analysis published by the *New York Times*, due to the weak yen to the dollar, the cost of equipment has increased, including for the U.S.-made Tomahawk missile, helicopters, submarines, and tanks. River Akira Davis and Hisako Ueno, "The Yen Is Plunging. So Is Japan's Defense Budget," *New York Times*, July 8, 2024.

‡Tomahawk cruise missiles on ships in 2025 would be the first time Japan would possess long-range strike capabilities. Christopher B. Johnstone, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 2.

§As Mr. Johnstone noted in his testimony, once Japan brings online its counter-strike capabilities, "Beijing will confront for the first time the prospect of a Japan that can shoot back, on its own and at long range," which would raise China's risk calculus and bolster deterrence against aggression. Christopher B. Johnstone, written testimony for U.S.-China Economic and Security

Japan has also made efforts to bolster its defense capabilities by expanding its military bases along its southwestern islands, as close as 68 miles from Taiwan.[251] Masafumi Iida, a leading China analyst at the National Institute of Defense Studies in Tokyo, argues that Japan must enhance the presence and capabilities of the Self-Defense Forces in the southwest islands to deal with "possible contingencies involving Taiwan and other areas."[252] Japan has opened bases that can accommodate land-to-ship and land-to-air missile units on Miyako in 2019 and Ishigaki in 2023, and in March 2024 it deployed a Ground Self-Defense Force unit based on Yonaguni that conducts EW, including intercepting adversary communications and jamming radar.[253] The expanded bases on its southwestern islands could complicate Chinese decision-making in the event of a conflict over Taiwan, potentially offering U.S. forces access to operate from these bases.[254] In addition, Japan is reportedly upgrading civilian air hubs and seaports for dual-use capability across the southwest islands, as well as ports in the north, to address concerns of a shortage of facilities that could be used in possible contingencies.[255]

A key element of Japan's evolving defense policies is deepening defense cooperation with the United States and other like-minded countries in the Indo-Pacific. The United States and Japan have agreed to expand U.S. presence, improve interoperability, cooperate on enhancing missile defense capabilities, explore opportunities to conduct maintenance and repair of U.S. naval ships at commercial shipyards in Japan,* and deepen defense science and technology cooperation.[256] In 2024, the two countries' announced new efforts to increase coordination on military command and control, which will enhance interoperability between the two militaries both in peacetime and in a crisis.[257] On July 28, 2024, both sides convened the Security Consultative Committee (also known as the 2+2) and announced that the United States intends to reconstitute U.S. Forces Japan (USFJ) as a joint force headquarters reporting to the commander of U.S. Indo-Pacific Command and serve as the counterpart to the Japan Self-Defense Forces Joint Operations Command (JJOC).[258] In a phased approach, the USFJ will assume primary responsibility for coordinating security activities in and around Ja-

Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 2.

*The U.S. Navy seeks to improve ship construction and repair yards and place major shipbuilding programs back on schedule by looking to partners and allies in the Indo-Pacific. U.S. Ambassador to Japan Ralph Emmanuel said that U.S. shipyards are "on average 4,000 days behind on repair and maintenance." Currently, in the case of multiyear repairs, the Japan-based U.S. naval ships are redeployed to a home port to the United States and a replacement vessel is subsequently forward deployed to Japan. Forward-deployed U.S. naval ships are currently serviced on site at U.S. naval bases in Yokosuka and Sasebo using contract Japanese workers. As of August 9, 2024, the Senate and House versions for the fiscal year (FY) 2025 National Defense Authorization Act (NDAA) both included provisions related to the overhaul, repair, and maintenance of deployed U.S. naval vessels in shipyards outside of the United States or Guam. The Senate FY 2025 NDAA includes a provision for the secretary of the navy to conduct a pilot program to perform maintenance and repair on forward-deployed naval force ships in foreign shipyards during scheduled maintenance and repair exercises. United States Senate Committee on Armed Services, *National Defense Authorization Act for Fiscal Year 2025 Report*, July 2024, 170; Servicemember Quality of Life Improvement and National Defense Authorization Act for Fiscal Year 2025, H.R. 8070, introduced June 13, 2024, 722; Alex Wilson, "US, Japan Plan Joint Ship and Aircraft Repair, Missile Production and Logistics," *Stars and Stripes*, June 11, 2024; Megan Eckstein, "US Navy Secretary Points to Foreign Shipyards' Practices to Fix Delays," *Defense News*, April 9, 2024; Justin Katz, "SECNAV Says 45-Day Shipbuilding Review Will Be Followed by Another Review," *Breaking Defense*, April 9, 2024; Ken Moriyasu, "U.S. Turns to Private Japan Shipyards for Faster Warships Repairs," *Nikkei Asia*, May 24, 2023.

pan in accordance with the U.S.-Japan Treaty of Mutual Cooperation and Security.[259] The United States increased its presence in Japan by establishing the Marine Littoral Regiment in Okinawa in 2022 with ISR and missile capabilities to cooperate with Japan's anti-ship and air defense units in Japan's southwestern islands.[260] The two countries' have also agreed to jointly develop a hypersonic missile interceptor, further enhancing allied missile defense capabilities.[261] In addition to strengthening bilateral defense ties with the United States, Japan has expanded cooperation with Australia, the Philippines, the UK, and the Republic of Korea.*[262] Finally, it has increased trilateral cooperation with the United States and the Philippines† and with the United States and Australia.‡[263]

Japan Likely to Support U.S. Military Action in a Conflict

In light of Japan's high level of perceived threat from the PLA and close defense cooperation with the United States, its policymakers would likely determine some level of cooperation with the United States to be in the country's interest in a conflict—including a conflict over Taiwan. As detailed above, Tokyo's defense policy documents clearly show that PLA aggression against Taiwan threatens Japan's immediate security.§[264]

Nevertheless, Japan is not guaranteed to grant the degree of access to its military facilities that the United States might prefer, and it may decide not to involve its own military forces at all. Under the Japan-U.S. Security Treaty, Article 6 provides U.S. forces the use of "facilities and areas in Japan" for the "maintenance of international peace and security in the Far East," which some analysts assess could be interpreted to include a conflict over Taiwan.[265] However, the United States' use of facilities and areas in Japan as bases for military combat—other than that conducted in response to an armed attack—would require "prior consultation"¶ before access

*Japan has signed reciprocal access agreements with both Australia and the UK in 2023. On July 8, 2024, Japan and the Philippines signed a reciprocal access agreement with the Philippines that would be used to support future bilateral and multilateral military exercises and training, including humanitarian assistance and disaster relief operations. Japan's Ministry of Foreign Affairs, *Signing of the Japan-Philippines Reciprocal Access Agreement*, July 8, 2024; Sebastian Strangio, "Philippines, Japan Sign Reciprocal Access Agreement Amid China Tensions," *Diplomat*, July 9, 2024; Takahashi Kosuke, "Japan, Philippines Agree to Intensify Defense Cooperation," *Diplomat*, November 3, 2023; Mari Yamaguchi, "Japan and Australia Agree to Further Step Up Defense Cooperation under 2-Month-Old Security Pact," *AP News*, October 19, 2023; Jim Garamone, "Japan, South Korea, U.S. Strengthen Trilateral Cooperation," *DOD News*, August 18, 2023; Japan's Ministry of Foreign Affairs, *Signing of Japan-UK Reciprocal Access Agreement*, January 11, 2023.

†Japan, the Philippines, and the United States have also agreed to strengthen trilateral cooperation by conducting joint exercises between their respective coast guards and expanding maritime training activity. White House, *Joint Vision Statement from the Leaders of Japan, the Philippines, and the United States,* April 11, 2024.

‡In February 2024, the United States and Japan invited Australia to join their historically bilateral Exercise Keen Edge for the first time to test the combined readiness of all three countries and demonstrate interoperability in response to security challenges in the region. Australia's Ministry of Defense, *Australia Joins Japan-United States Exercise for First Time,* February 2, 2024.

§In recent years, even Japan's joint statements with international counterparts have also grown more vocal about the importance of stability in the Taiwan Strait, suggesting a desire to leverage international partnerships against the growing risk. U.S. Mission Japan, *Joint Statement of the Security Consultative Committee (2+2)*, January 11, 2023; David Sacks, "Reconsidering Japan's Role in the Taiwan Strait, *Georgetown Journal of International Affairs*, February 7, 2022; U.S. Department of Defense, *Joint Statement of the U.S.-Japan Security Consultative Committee ("2+2")*, January 6, 2022.

¶The United States and Japan clarified the implementation of the Treaty of Mutual Cooperation and Security between Japan and the United States in the 1960 Exchanges of Notes that under Article 6, any "major changes in the deployment into Japan of United States armed forces,

is approved, allowing opportunity to voice concerns about risks.[266] In observing Tokyo's policy shift since 2010, Mr. Johnstone testified he is no longer concerned about "first-order questions" such as whether the U.S. military would be permitted to operate from its military bases in Japan in a conflict scenario.[267] Uncertainties nevertheless remain about whether public opinion would support further U.S. military access to all of Japan's military bases or civilian ports and airports.[268] Mr. Johnstone also cautioned that he remains uncertain on "second-order question[s]" such as the degree of military support Tokyo would provide.[269] Any use of force, whether in self-defense in response to a direct attack on Japanese territory or in collective self-defense in response to an attack on a third party, must be approved by the Diet.[270] The Japanese Diet was divided on the 2015 security legislation establishing Japan's right to collective self-defense, and a more recent opinion poll from 2022 suggests approving the use of military force even in noncombat roles could be a politically unpopular decision.*[271]

If China were to strike Japanese territory, including U.S. bases, experts assess this would increase the likelihood of Tokyo granting the U.S. military permission to conduct combat operations from its bases.[272] Such strikes would also constitute what the Japanese government terms an "armed attack situation," which provides justification for the potential use of military force by Japan.[273] At an event in 2021, Japan's then Deputy Prime Minister Taro Aso commented that "if a major problem took place in Taiwan, it would not be too much to say that it could relate to a survival-threatening situation," invoking a term for a situation that could justify use of military force in defense of a third party, although Japan's government did not confirm the comment reflected official policy.[274]

The Philippines' Perspectives on Addressing Threats from China's Military

The current government of the Philippines views China's aggressive military activities in the South China Sea as a serious threat to its military and economic security, and it is concerned about the impact a conflict between China and the United States would have on regional stability. The Philippines seeks to improve its own capacity to defend its maritime interests against China's aggression through military modernization and deepening security partnerships throughout the region.

The Philippines Views China's Military as a Present and Potential Future Threat

A chief concern for the current government of the Philippines under President Ferdinand Marcos Jr. is China's aggressive military

major changes in their equipment, and the use of facilities and areas in Japan as bases for military combat operations to be undertaken from Japan other than those conducted under Article V of the said Treaty, shall be the subjects of prior consultation with the Government of Japan." Japan's Ministry of Foreign Affairs, *Treaty of Mutual Cooperation and Security Between Japan and the United States of America*, 1960.

*One public opinion poll from 2022 found that only 22.5 percent of Japanese respondents supported Japan's forces fighting with the United States against the PLA in a Taiwan conflict, while 74.2 percent opposed it. Further, only 44.8 percent supported Japan's forces performing noncombat supportive roles, with 51.1 percent opposing such action. Zhuoran Li, "No, Japan Will Not Defend Taiwan," *Diplomat*, March 18, 2024.

presence and activities in the South China Sea.* The 2023 Philippine National Security Policy notes that other South China Sea claimants' "methods of asserting their positions" pose a "strategic challenge."[275] As Mr. Ibarra emphasized in his testimony for the Commission, the Philippines faces acute threats from China in this area.[276] One element of this threat is the presence of PLA military installations on South China Sea features in the Philippines' immediate vicinity, with the closest located only about 140 miles from its fifth-largest island, Palawan.[277] Mr. Ibarra assesses that these installations could "give China [an] early advantage against the Philippines in the event of war."[278] A second element of the threat is aggressive "gray zone" activities from China's military and paramilitary forces in the South China Sea, which have included blocking, swarming, ramming, and even sinking Philippine vessels as well as targeting them with water cannons, laser weapons, and naval gun rangefinders.[279] These aggressive actions present both a physical threat to Philippine forces and assets and a severe challenge to economic security, preventing the country from exploring or exploiting many of the natural resources within its own EEZ.[280] (For more on China's aggressive actions in the South China Sea against the Philippines, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).")

In addition, the Philippine government and public are concerned about the implications of a military conflict involving China for its own security interests and the lives of its citizens. Its National Security Policy voices concern over "heightened rivalries among the major powers," noting that the resulting tense geopolitical landscape means regional flashpoints could potentially serve as "tinderboxes for conflict."[281] Philippine policymakers are also concerned about conflict in the Taiwan Strait, especially the severe impact on economic stability, threat to the welfare of Filipinos in Taiwan, and potential influx of refugees to the country that would result.[282] Poll-

*The degree of importance that the Philippines' previous president Roderigo Duterte placed on asserting Philippine rights vis-à-vis China in the South China Sea was not consistent over the course of his time in office. Overall, then President Duterte pursued a relatively conciliatory approach to China in hopes of benefiting from China's promises of economic cooperation. His administration is described as having downplayed China's aggressive behavior in the South China Sea and at first largely ignoring the decisive tribunal ruling in 2016 that struck down many of China's maritime claims in favor of the Philippines. China's embassy and some media sources have even alleged that the Duterte Administration brokered an informal deal or "gentleman's agreement" with China to avoid confrontation over Second Thomas Shoal—a low-tide feature within the Philippines EEZ that China seeks to control. (For more on Second Thomas Shoal and China's recent aggression in this area, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).") Descriptions of the alleged deal suggest China may have offered the Philippines limited fishing rights and potentially other economic benefits in exchange for agreeing to restrict deliveries of supplies to the grounded Philippine warship on the shoal. Other analysts and observers note, however, that continued escalation of China's aggression in the South China Sea led then President Duterte to harden his stance in 2020 and to begin insisting that the 2016 tribunal ruling be respected. In his final state of the nation speech in July 2021, he changed his stance and again downplayed the significance of the ruling. Christopher Bodeen, "China Publicizes for the First Time What It Claims Is a 2016 Agreement with Philippines," *AP News*, May 3, 2024; Mong Palatino, "Ex-Phililppine President Rodrigo Duterte's 'Gentleman's Agreement' with China under Scrutiny," *Diplomat*, April 5, 2024; Edcel Ibarra, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 7; Derek Grossman, "Duterte's Dalliance with China Is Over," *Foreign Policy*, November 2, 2021; Yuichi Shiga and Kenji Kawase, "Duterte Stresses Soft Approach Toward China in Last Policy Speech," *Nikkei Asia*, July 27, 2021; Joshua Kurlantzick, "Duterte's Ingratiating Approach to China Has Been a Bust," *Council on Foreign Relations*, June 16, 2021; Sabastian Strangio, "In UN Speech, Duterte Stiffens Philippines' Stance on the South China Sea," *Diplomat*, September 23, 2020.

ing by the Eurasia Group Foundation released in 2023 reports that a majority of Filipinos fear geopolitical confrontation between the United States and China could lead to a deterioration of Philippine national security.[283]

The Philippines Invests in Security Partnerships and Its Own Capabilities

Although the previous Duterte government temporarily sought to downgrade the Philippines' security cooperation with the United States as part of its conciliatory policy toward China,* the current government is deepening its security partnership with the United States as a key avenue for addressing the challenges from China's military. The 2023 expansion of EDCA, which allows the U.S. military a rotational presence at certain Philippine bases, represents a continued commitment to defense cooperation with the United States relating to Manila's security interests.[284] The two countries also continue efforts to upgrade infrastructure† at EDCA locations, some of which play an important role in facilitating joint action in the South China Sea.[285] The allies also conduct an annual military exercise, Balikatan, which aims to increase interoperability and has increased in complexity over the past several years.‡[286] Balikatan 2023 was the largest iteration of the exercise to date, with more than 17,600 members of the two countries' militaries participating, almost double the number from 2022.[287] The exercise focused on improving capabilities in the areas of maritime security, amphibious operations, live-fire training, aviation operations, and cyber defense, among others.[288] The 2024 exercise took place in areas facing Taiwan and the South China Sea, and it was the first to occur outside the Philippines' territorial waters in its EEZ.[289] The exercise included activities on maritime security, sensing, and targeting; air and missile defense; dynamic missile strikes; cyber defense; and information operations.[290] The United States and the Philippines have conducted joint patrols in the waters near Taiwan in the South China Sea.[291] They have also increased the cooperation between their

*In February 2020, then President Duterte announced the cancelation of the U.S.-Philippines Visiting Forces Agreement (VFA), which in 1999 established the legal basis for the presence of U.S. Armed Forces personnel visiting the Philippines. After several subsequent announcements suspending this cancelation and a meeting between then President Duterte and U.S. Secretary of Defense Lloyd Austin, the agreement was fully restored in July 2021. Andrea Chloe-Wong, "Duterte's Back-Down on US Forces in Philippines," *Interpreter*, August 24, 2021; U.S. Department of Defense, *Philippines President Restores Visiting Forces Agreement with U.S.*, July 30, 2021; Idrees Ali and Karen Lema, "Philippines' Duterte Fully Restores Key U.S. Troop Pact," *Reuters*, July 20, 2021.

†The EDCA agreement allows the United States to fund modernization and upgrades of the military infrastructure at these bases, including improvements to runways and airfields, new or improved storage facilities for fuel and ammunition, additional aircraft hangars and staging areas, new command and control infrastructure, and new training facilities. Jen Judson, "US Troops Put New Philippine Military Sites to Test in Balikatan Drill," *Defense News*, May 12, 2024; Asia Maritime Transparency Initiative, "More than Meets the Eye: Philippine Upgrades at EDCA Sites," *Center for Strategic and International Studies*, October 12, 2023; David Vergun, "New EDCA Sites Named in the Philippines," *DOD News*, April 3, 2023.

‡Although primarily a U.S.-Philippines exercise, Balikatan has also included certain other states as participants and observers. In 2024, the exercise included participants from Australia and France alongside the United States and the Philippines and observers from Brunei, Canada, France, Germany, India, Indonesia, Japan, Malaysia, New Zealand, Singapore, South Korea, Thailand, the UK, and Vietnam. In 2023, Australia participated while Brunei, Canada, France, India, Indonesia, Japan, Malaysia, Singapore, South Korea, Thailand, the UK, and Vietnam observed. Maria T. Reyes, "Balikatan 2024 Builds Philippine-U.S. Interoperability, Multilateral Partnerships," *Indo-Pacific Defense Forum*, May 5, 2024; Philippines Department of National Defense, *Biggest Balikatan Exercises End; Galvez, Aquilino Meet*, May 3, 2023.

coast guards through training and conducted the first-ever trilateral at-sea coast guard exercise with Japan.[292] Finally, the United States and the Philippines are working to facilitate military intelligence sharing, although efforts to conclude the requisite agreement remain in progress.*[293]

The Philippines continues to pursue investments in its own military capabilities, especially in the maritime and air domains. In addition to enhanced cooperation with the United States, Mr. Ibarra testified that although its planned modernization efforts cannot build up the Philippine military forces to a degree that it could counter threats from China alone, they do represent significant efforts toward a "minimum credible defense posture."†[294] In February 2024, Philippines President Marcos approved a defense spending plan of approximately $35 billion over the next decade, representing the third stage of a three-stage military modernization effort begun under former President Benigno Aquino III in late 2012 after China seized Scarborough Shoal.‡[295] This third stage, known as Horizon 3, is aimed especially at bolstering the Philippine military's naval, aerial, and surveillance capabilities, including intended purchases of fighter aircraft, warships, submarines, and missiles.[296] In March 2024, the Marcos Administration adopted a new Comprehensive Archipelagic Defense Concept as a conceptual guide for military modernization efforts.§[297] The concept places particular emphasis on land, maritime, and air capabilities and seeks to solidify a shift toward prioritizing improvements in the military's capacity to defend itself from external threats, a departure from the previous, more narrow focus on internal security challenges.[298]

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*The United States and the Philippines are working toward the conclusion of a General Security of Military Information Agreement (GSOMIA), which would facilitate military intelligence sharing by ensuring the protection of classified information in both countries. The agreement, which the two parties currently hope to conclude by the end of 2024, has been under discussion since at least 2021. U.S. Embassy in the Philippines, *Joint Statement on the Philippines-United States Bilateral Strategic Dialogue*, April 25, 2024; U.S. Department of Defense, *FACT SHEET: U.S.-Philippines 2+2 Ministerial Dialogue*, April 11, 2023; U.S. Department of State, *Joint Vision for a 21st Century United States-Philippines Partnership*, November 16, 2021.

†The Philippine Department of National Defense defines a "credible defense posture"—the goal of Philippine military modernization—as the "establishment of an effective presence inside the Philippines and its exclusive economic zone or EEZ with exhibited competence to defend the country and protect its national interests if and when the need arises." According to the Office of the President of the Philippines in 2023, "A minimum credible defense posture means attaining a particular degree of military capability or enough defense capacity to make any aggressor think twice before engaging in hostile action." Some government sources have identified the "minimum credible defense posture" as an intermediary step toward the Philippines' ultimate defense goals. Office of the President of the Philippines, *AFP Cites Importance of PH's Strong Naval Capability amid Current WPS Situation*, September 9, 2023; Senate of the Philippines, *Photo Release*, August 30, 2023. *https://legacy.senate.gov.ph/photo_release/2023/0830_20.asp*; Philippines Department of National Defense, *Defense Chronicle*, 6:1 (2022): 6–7.

‡The first stage—known as Horizon 1 (2013–2017), under former President Aquino III—divided funding among the army, navy, air force, and joint staff, acquiring assets including helicopters and training, transporter, and fighter aircraft. The second stage—Horizon 2 (2018–2023), under former President Duterte—tripled funding for the navy and increased funding for the air force six-fold. Assets acquired in this time period included anti-submarine helicopters, warships, cruise missiles, and amphibious armored vehicles. Edcel Ibarra, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 7.

§In 2021, the Philippine Marine Corps released a new operating concept called Archipelagic Coastal Defense (ACD), which aims to enhance sea control capabilities as a means of safeguarding the nation's territorial integrity. Some observers have noted similarities between this service-level concept and the newly announced national-level Comprehensive Archipelagic Defense Concept, suggesting that the former may have played a role in influencing the latter. Rej Cortez Torrecammpo, "A Paradigm Shift in the Philippines' Defense Strategy," *Diplomat*, April 3, 2024; Rej Cortez Torrecampo, "Philippine Marines' New Operating Concept Highlights Their Growing National Security Role," *Diplomat*, May 6, 2021.

The Philippines has prioritized forging and deepening security partnerships with other countries. These efforts have potential second-order benefits for U.S. security interests by strengthening the Manila's baseline capabilities and increasing its interoperability with other allies.[299] For example, the Philippines and Australia have taken recent steps to build on the foundation of their Visiting Forces Agreement* with the signing of a new Mutual Logistics Support Arrangement in 2022 and the initiation of joint patrols† in the South China Sea in 2023.[300] In 2023, Japan and the Philippines agreed to begin negotiations on a Reciprocal Access Agreement that would facilitate the deployment of forces and equipment in each other's territories for defense cooperation, ultimately concluding the agreement in July 2024 amid China's heightened aggression in the South China Sea.‡[301] The Philippines has pursued expanded defense cooperation with a host of other partners inside and outside the region, including Canada, the EU, France, Germany, India, and the UK, covering a range of efforts related to military modernization, information sharing, joint exercises and training, and—in the case of Canada and France—exploring the possibility of future visiting forces agreements.[302]

Details of Philippine Policy in a Conflict with China Remain Undetermined

Compared to the Japanese government, decisions by the Philippine government to involve its own forces or facilitate the operations of U.S. forces in a conflict with China are even more uncertain and will depend on a number of factors. The differing stances taken by Philippine governments in the past on security cooperation with the United States provide one reason for caution. Mr. Johnstone additionally warns that even if the Philippine government were to ultimately allow the U.S. military to use bases on its territory, this decision may not be made on a timeline that facilitates U.S. action in a crisis.[303] Potential factors in the Philippine leadership's decision of whether or how to become militarily involved or grant U.S. military access to its bases during a conflict with China would likely include the following:

- *China's actions:* One set of potential factors has to do with the Philippine government's assessment of China's actions during or after the conflict. For example, many experts agree that if China were to directly attack Philippine territory, the Philippines would be more likely to support the United States military thereafter, including potentially providing base access.[304]

*Australia is currently the only country other than the United States to maintain a Visiting Forces Agreements with the Philippines. Aaron-Matthew Lariosa, "Australia, Philippines Commit to Strategic Partnership, Pledge Joint Patrols," *USNI News*, September 11, 2023; Australian Embassy in the Philippines, *Australia-Philippines Defense Cooperation*.

†Australia is also only the second state, aside from the United States, to conduct joint patrols with the Philippines. *Australian Associated Press*, "Australia and Philippines Begin Joint Patrols in South China Sea as Regional Tensions Rise," *Guardian*, November 25, 2023; Aaron-Matthew Lariosa, "Australia, Philippines Commit to Strategic Partnership, Pledge Joint Patrols," *USNI News*, September 11, 2023.

‡Japan has also provided significant security assistance to the Philippines in the form of a contract for an air surveillance system and an approximately $4 million (600 million yen) grant for securing coastal radars, strengthening the Philippines' maritime domain awareness and improving its capacity to respond to China's aggressive actions in the South China Sea. Mikhail Flores and Karen Lema, "Japan, Philippines Agree to Hold Talks on Reciprocal Troops Pact, *Reuters*, November 3, 2023.

However, absent a direct attack by China, Philippine leaders' perception that involvement or association with U.S. military activities could cause China to strike Philippine territory could decrease the likelihood and scope of the Philippine government's support for U.S. efforts.*[305] The Philippine government may also consider the risk of potential economic retaliation by China.[306]

- *U.S. actions and requests:* A second set of potential factors has to do with U.S. actions and the Philippine government's assessment of U.S. actions or likely actions during the conflict. A detailed 2023 RAND Corporation study on factors likely to influence host nation decisions about whether to grant the United States military access during conflict emphasizes that an important factor would likely be Philippine leaders' assessment of whether the United States will defend Philippine territory in a conflict.[307] Mr. Johnstone argues that "continuing to demonstrate U.S. commitment in areas that are vital to Philippines security," especially the South China Sea, will likely be key to obtaining the access the United States desires at EDCA sites.[308] Separately, the RAND Corporation study assesses that the type of access the United States requested could also play a role, with the Philippine government being more likely to approve requests for "nonkinetic or lower-end capabilities, such as ISR, overflight, and logistics" compared to "higher-end kinetic capabilities," such as long-range strikes or direct combat operations from Philippine soil.[309]
- *Public opinion:* Like the governments of other democratic allies, the Philippine government would need to consider public opinion as part of a decision on military actions in a conflict with China.[310] Elements of public opinion that could work in the United States' favor include a continued hardening of public sentiment against China as a result of the country's relentless pressure in the South China Sea; support from many Filipinos for closer relations with the United States; and a widespread desire to see the Philippine government defend the country's maritime rights more seriously.[311] Nevertheless, the leverage the United States has to push for additional benefits under the EDCA agreement, for example, are likely limited. Mr. Ibarra warns that EDCA is already viewed domestically as a serious concession to the United States due to its similarities to a basing agreement and because of perceptions that the recent expansions in the north are more focused on U.S. security concerns that those of the Philippines.[312] Additionally, EDCA is an executive action that likely does not enjoy universal political support among the Philippine legislature,† making it potentially vulnerable to reconsideration

*A 2023 RAND study indicated that this judgment could be informed in part by whether China has attacked other U.S. allies granting access. Bryan Frederick et al., "Improving Conflict-Phase Access: Identifying U.S. Policy Levers," *RAND Corporation*, 2023, 82.

†The EDCA agreement was challenged in the Philippine Supreme Court, with the opposition arguing that the agreement constituted a treaty subject to the approval of the Philippine Senate. In 2016, the Supreme Court upheld the constitutionality of EDCA as an executive action not requiring Senate approval. *PressOnePH*, "FACT-CHECK: EDCA Is Not Unconstitutional," April 24, 2024; Renato Cruz de Castro, "Philippine Supreme Court Approves EDCA: Unlocking the Door for the Return of U.S. Strategic Footprint in Southeast Asia," *Center for Strategic and International*

by future administrations.[313] Other potential limits to public support for further security cooperation could come from local governments and business leaders who believe angering China runs counter to their economic interests.[314]

Regarding a conflict over Taiwan, the Philippine government is open to cooperation in principle but has likely not determined in advance what course of action would most serve its interests. The 2023 Philippines National Security Policy states that "any military conflict in the Taiwan Strait would inevitably affect the Philippines" in light of its geographic proximity and the presence of over 150,000 Filipinos in Taiwan; however, it does not lay out any particular indicators of how the government would respond in a conflict scenario.[315] In a 2023 interview, President Marcos stated that "when we look at the situation in the area, especially the tensions in the Taiwan Strait, we can see that just by our geographical location, should there in fact be a conflict in that area… it's very hard to imagine a scenario where the Philippines will not somehow get involved."[316] As to whether that involvement would involve a military response, he replied that this would depend on the circumstances and what was best for the Philippines.[317] Similarly, Philippine Ambassador to the United States Jose Manuel G. Romualdez has reportedly stated that Manila would allow the U.S. military to use its bases in the event of a Taiwan conflict only "if it is important for us, for our security."[318] Some experts have assessed that for a country like the Philippines with a significant number of its citizens in Taiwan, a large-scale attack such as an amphibious invasion directly threatening those citizens may be more likely to incentivize supporting actions than a more limited attack such as military action against one of Taiwan's offshore islands.[319]

Australia's Perspectives on Addressing Threats from China's Military

Australia is increasingly focused on countering threats from China's military, especially the PLA's A2/AD capabilities, due to their perceived potential to restrict its forces' activity in their immediate region while pushing U.S. forces out of the region. Australian policymakers are pursuing military reforms alongside deepening defense cooperation with the United States, the UK, and other partners. Australia's government would likely view providing some kind of support to the United States in the event of a conflict with China as being in line with its interests; however, this support may not include direct military participation.

Australia Views China's Military Capabilities as a Threat

Expert assessments and defense policy documents from Australia evince serious concern about China's A2/AD capabilities. For example, the Australian government's 2023 Defense Strategic Review noted an increasing need to defend not only against the remote possibility of invasion but also against the more immediate threats from regional countries' ability to project power across greater ranges and threaten it without an invasion.[320] One element of this per-

Studies Asia Maritime Transparency Initiative, February 1, 2016; Rappler, "SC Rules: PH-US Military Deal Constitutional," January 12, 2016.

ceived threat is the PLA's ability to hit Australia's northern base infrastructure with missile attacks from air-launched, sea-launched, and ground-launched land-attack cruise missiles and IRBMs.[321] A second element is that these capabilities restrict the Australian military's ability to defend the country's sea lines of communication.[322] A third element is a concern that China's A2/AD capabilities and gray zone efforts are designed to push the United States out of the region, cutting Australia off from its most important defense partner and ally.[323]

Australian defense officials and analysts view the possibility of a Chinese forward base in the South Pacific as a development that would increase the risks from China's forces. Concern about a potential Chinese military presence in the Pacific Island states surfaced clearly among Australia's think tank community and from political leaders in 2018 amid reports of Chinese military cooperation with Vanuatu and investments in Papua New Guinea; it has continued as China's engagements in the region have grown and escalated with the conclusion of a security deal between China and the Solomon Islands in 2022.[324] Australia's Deputy Prime Minister and Minister for Defense Richard Marles stated in an interview with the Center for Strategic and International Studies in 2022 that a Chinese base in the Pacific would "completely change the national security landscape for Australia."[325] In her testimony, Ms. Shrimpton explained that a PLA presence in the southwest Pacific would dramatically enhance the range of China's A2/AD capabilities and thus "fundamentally challenge and change Australia's requirements for [its military] force."[326] Specifically, a PLA presence in the second island chain could require Australia to dedicate more resources to defending its east coast from air and missile threats, "tying down Australian forces" to the potential detriment of operations within the first island chain.[327]

Australia Reorients Its Military and Supports Deepening Alliance Cooperation

Australia is in the midst of a major effort to jumpstart and reorient its domestic defense apparatus to be better suited to address threats from China's military. Significant progress has been made in a short time at articulating a new approach, although the degree of follow-through on resourcing and implementation remains to be seen. In 2020, the Australian Department of Defence released a Defence Strategic Update that emphasized Australia's need for "more potent capabilities to hold adversary forces and infrastructure at risk further from Australia," among other items.* [328] In 2023, the department released a Defense Strategic Review arguing that Australia needed to replace its traditional defense concept focused on low-intensity regional conflicts with an integrated national defense concept focused on great power conflict.[329] To match this conceptual shift, the document advocated for the transformation of Australia's military from a "balanced force" designed to perform in a wide range of low-level,

*Other priorities identified included strengthened regional partnerships, a more durable supply chain, and improved capacity to respond to gray zone and cyber threats. Australian Government Department of Defence, *2020 Defence Strategic Update*, 2020, 33.

regional, and global missions into a "focused force" designed to prioritize meeting Canberra's most significant military risk: great power conflict.[330] The review additionally recommended that Australia adopt a strategy of deterrence by denial and build up its own capacity to threaten adversarial forces.[331] Finally, it called for Australia's joint force to become more integrated across the five domains of maritime, land, air, space, and cyber.[332] In 2024, the Australian government codified this set of recommendations into its first National Defense Strategy.[333] The National Defense Strategy also reinforces the review's attention to six specific areas, highlighted as immediate priorities in both documents: (1) advancing Australia's conventionally armed, nuclear-powered submarine capability; (2) enhancing Australia's long-range strike capabilities and production of munitions; (3) strengthening Australia's northern bases; (4) improving growth and retention of a highly skilled workforce; (5) boosting innovation; and (6) prioritizing partnerships in the Indo-Pacific.[334] The strategy was accompanied by a substantial funding boost* as well as an overall implementation plan called the 2024 Integrated Investment Program allocating funding toward various efforts in the maritime, land, air, space, and cyber domains.[335]

Australia is deepening cooperation with the United States in the framework of the alliance.† The U.S. and Australian militaries work to improve interoperability and demonstrate the strength of the alliance to third parties through cooperative efforts known as Force Posture Initiatives, which have recently expanded.‡[336] Expanded force posture cooperation aims to increase Australia's role in hosting forward-deployed U.S. forces and to further prepare Australian forces to support "high-end" military operations in the

*The National Security Strategy announces additional defense funding of about $3.8 billion (5.7 billion Australian dollars [AUD]) in the four years between 2024 and 2028 and about $33.5 billion (50.3 billion AUD) over the decade between 2024 and 2034 over and above the previous trajectory for the period. This yields a total amount of about $219.9 billion (AUD 330 billion) over that period. Australian Government Department of Defence, *National Defense Strategy*, 2024, 8; Australian Government Department of Defence, *National Defense Strategy Overview*, 2024.

†Australia and Japan have also recently signed a set of consequential security agreements that can facilitate deepening defense cooperation between them in the future. In 2022, Australia and Japan signed an update to their 2007 Joint Declaration on Security, with the new version more clearly alluding to China's challenges to regional security and containing language that closely echoes that of the ANZUS security treaty between Australia, New Zealand, and the United States, although it remains nonbinding. August 2023 saw the entry into force of the Japan-Australia 2022 Reciprocal Access Agreement, which will likely result in increased joint training and exercises between the two countries. The agreement strengthens the legal framework and establishes regular procedures for cooperative military activities, including relaxing immigration control for military personnel and simplifying procedures for transporting weapons and ammunition. The first application of the agreement later in 2023 saw Japan deploy two F-35 aircraft to Australia—the first-ever overseas deployment of F-35s by Japan—in an exercise that is likely to pave the way for greater interoperability in the future. Shingo Nagata, "Security Cooperation Steps Up with Japanese F-35 Access to Australia," *Australian Strategic Policy Institute*, March 6, 2024; Prime Minister's Office of Japan, *Japan-Australia Joint Declaration on Security Cooperation*, October 22, 2023; Ryo Nakamura and Rurika Imahash, "U.S. Cements 'Game Changing' Defense Ties with Australia, Japan," *Nikkei Asia*, August 16, 2023; Australian Government, *Australia and Japan Deepen Defense Ties*, August 14, 2023; David Walton and Daisuke Akimoto, "What's New in Australia and Japan's Updated Joint Declaration of Security Cooperation?" *Diplomat*, October 25, 2022; Japan's Ministry of Foreign Affairs, *Japan-Australia Reciprocal Access Agreement*, January 6, 2022; Australian Government Department of Foreign Affairs and Trade, *Australia-Japan Joint Declaration of Security Cooperation*.

‡Preexisting force posture initiatives included the U.S. Marine Rotational Force Darwin; Enhanced Air, Land, and Maritime Cooperation initiatives; Combined Logistics Sustainment and Maintenance Enterprise; and Enhanced Space Cooperation initiative. Australian Government, Defense, *United States Force Posture Initiatives*.

Indo-Pacific region.[337] In 2022, the United States and Australia committed to expanding force posture activities by "identifying priority locations in Australia to support enhanced U.S. force posture and exploring enabling logistics such as prepositioning of stores, munitions, and fuel."[338] Upgrades to key Australian bases Darwin and Tindal are also underway, with the two countries collaborating on infrastructure improvements to support bomber aircraft.[339] Another avenue for cooperation is Exercise Talisman Sabre,* a biennial, joint military exercise designed to improve operability and combat readiness and to train military forces from the two countries to plan and conduct combined task force operations.[340] The exercise has recently included a considerable emphasis on complex joint logistics.[341]

If fully implemented, the trilateral AUKUS partnership between Australia, the UK, and the United States has the potential to improve Australia's ability to counter China's A2/AD capabilities. The AUKUS framework comprises two main lines of effort: Pillar One, which supports Australia's acquisition of nuclear-powered submarines,† and Pillar Two, which involves enhancing joint capabilities and interoperability with a focus on cyber capabilities, AI, quantum technologies, and undersea capabilities.[342] Australia's government argues that the Pillar One acquisition of conventionally armed nuclear-powered submarines will enhance Australia's capacity to both deter coercion and project its own military power.[343] Regarding power projection, Australia is particularly focused on defending its maritime approaches and protecting its sea lines of communication, both of which it has identified as being under threat.[344] Key advantages of the nuclear-powered submarine in these areas include its superior stealth, speed, and range, which Australia assesses would both strengthen deterrence and improve its ISR capabilities.[345] On Pillar Two, the AUKUS partnership represents potential new avenues for the three countries to counter challenges from China through defense technology sharing.[346] In her testimony for the Commission, Ms. Shrimpton described AUKUS as the most important defense policy choice Australia has made in decades, emphasizing that the two pillars are mutually reinforcing.[347] In contrast, Mr. Johnstone describes the partnership as symbolically useful but too narrow in scope to have a meaningful contribution to near-term deterrence.[348]

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*The name of the exercise is spelled "Talisman Sabre" in years when Australia leads and "Talisman Saber" in years when the United States leads. Joseph Clark, "Talisman Sabre 23 Reflects U.S., Allies' Commitment to Indo-Pacific," *DOD News*, July 31, 2023.

†Australia's pathway to a conventionally armed nuclear submarine capability under AUKUS is planned as a phased approach. The three countries will work together to jointly produce the AUKUS submarines for delivery to the UK by the late 2030s and to Australia by the early 2040s. In the interim, while the new submarines are in development, the partners plan to work together to bolster deterrence and to develop Australia's capacity to operate the coming vessels safely. Planned steps identified in 2023 included: embedding Australian personnel within the U.S. and UK navies beginning in 2023, increasing the frequency of visits by U.S. and UK nuclear-powered submarines to Australia in 2023 and 2026, respectively, establishing a rotational presence of U.S. and UK nuclear-powered submarines in Australia as early as 2027, and allowing Australia to procure several Virginia-class nuclear-powered submarines from the United States beginning in the early 2030s before Australia's diesel-electric submarines are set to begin retiring. Commonwealth of Australia, *The AUKUS Nuclear-Powered Submarine Pathway: A Partnership for the Future*, 2023, 4, 7–8, 19–20, 28.

Australia Committed to Close Cooperation, Participation Parameters in a Conflict Remain Uncertain

Australia's government would likely view providing some kind of support to the United States in the event of a conflict with China as being in line with its interests. The Australian Department of Defence describes the country's alliance with the United States as "central to Australia's strategic and security arrangements," and Australia's new National Defense Strategy calls it "fundamental to Australia's national security."[349] Australia has decided to support the U.S. military in every major conflict over the past century, which Ms. Shrimpton assessed in her testimony is due in part to the centrality of the alliance relationship to Australian security and military planning.[350] Although it does not commit in advance to any policy position related to a conflict with China, Australia's 2020 Defense Strategic Update describes a U.S.-China conflict in very similar terms to the conditions that may sufficiently impact Australia's interests to call for the engagement of the Australian military.[351] The document emphasizes that "high-intensity military conflict . . . including high-intensity military conflict between the United States and China" is "less remote" than in the past; recognizes that "state-on-state conflict . . . could engage the Australian Defense Force (ADF) where Australia's interests are threatened"; and states that "the ADF must be better prepared for [high-intensity] conflict if deterrence measures fail, or to support the United States and other partners where Australia's national interests are engaged."[352]

Australian policymakers have publicly committed to acting in a conflict over Taiwan and may be supported in doing so by the Australian public, but this action may not include direct military participation. In 2021 and 2023, successive Australian defense ministers publicly stated that it is "inconceivable" that Australia would not support the United States in any conflict with China over Taiwan and that the consequences of a U.S.-China conflict over Taiwan "are so grave that we cannot be passive bystanders."[353] Joint official statements at the head of state and ministerial levels in 2023 also emphasized shared opposition to unilateral changes of the status quo in the Taiwan Strait.[354] Nevertheless, some experts caution that Australia does not consider a Taiwan conflict as direct a threat to its own security as Japan does by virtue of its geography, raising questions about what shape this support might take.[355] Ms. Shrimpton further noted in her testimony for the Commission that although there is a broad consensus in Australia about the importance of maintaining freedom of navigation in the South China Sea and Taiwan Strait, "there is yet to be a serious national debate on Australia's potential response to a Chinese invasion of Taiwan."[356] A public opinion survey in 2023 revealed similarly varied views among the Australian public. The poll suggests that approximately 64 percent of Australians view a military conflict between the United States and China over Taiwan as a "critical threat" to Australia's vital interests, double the proportion from two years earlier, while an additional 32 percent rank it an "important" threat.[357] A majority of respondents to the poll also support Australia taking certain actions to assist in the event of such a conflict, up to and including provision of arms and military support and the involvement of the Austra-

lian Navy in countering a blockade; however, there is no majority support for sending Australian personnel to Taiwan itself.*[358] Ryan Neelam, director of public opinion at the Lowy Institute, the foreign policy think tank conducting the poll, summarizes the takeaway as, "When it comes to a specific scenario where Taiwan is under military threat and the U.S. is engaged, Australians feel quite forward leaning about taking action to support Taiwan… but that doesn't extend as far as putting boots on the ground."[359]

Implications for the United States

The U.S. interests at stake in a regional conflict scenario—including the defense of treaty allies and potentially other Indo-Pacific partners—justify dedicated attention to assessing the PLA's counter-intervention capabilities and ensuring sufficient U.S. and allied preparedness to counter them. PLA aggression against one of its neighbors in the Indo-Pacific region could have serious consequences for the security of the individual parties involved, for freedom of navigation through regional waters and airspace, for broader regional stability and prosperity, and potentially for the United States' reputation as a reliable security partner and ally. Ensuring that the United States has the military capability it needs to defend its allies, its access, and the rules-based international order in a potential conflict with the PLA—should circumstances demand it—is part of the overall task of deterring such aggression in the first place. Expanding access, basing, and overflight (ABO) agreements with U.S. allies and partners in the region will also play an important role in this effort.

China seeks to overcome the challenges posed by U.S. and allied evolving capabilities and operational concepts to counter its counter-intervention. The PLA continues to build up its already large stockpile of offensive missiles to target U.S. and allied forces, and it has placed greater emphasis on improving the PLA's C4ISR and EW capabilities. In addition, the PLA is developing kinetic and non-kinetic counter-C4ISR capabilities to attack, degrade, and paralyze the United States' own C4ISR capabilities, which are vital to the United States' ability to project power. These activities could complicate and threaten current U.S. and allied capabilities to effectively counter China's military aggression in conflict.

Publicly available evidence suggests that while China is paying close attention to U.S. and allied efforts to strengthen their military capabilities, it is also paying attention to any challenges regarding implementation.[360] Chinese observers are aware of the inherent difficulties in reorienting U.S. force posture in the region, deepening alliance cooperation, and strengthening the capabilities of the U.S. defense industrial base.[361] Stagnation, delay, or reversal of existing

*Regarding potential response to a military conflict between the United States and China over Taiwan, 76 percent of survey respondents support imposing sanctions, 64 percent support sending arms and military supplies to Taiwan, and 61 percent support participation by the Australian Navy to counter a blockade of the island, but only 42 percent support sending "Australian military personnel to Taiwan to help defend it from China." These numbers collected by the Lowy Institute in Australia are comparable to those reported in the United States in 2022 by the Chicago Council on Global Affairs regarding the U.S. public's willingness to take the same actions. Kristy Needham, "Australians Say They Would Support Taiwan if China Attacked, with Limits, Poll Shows," *Reuters*, June 20, 2023; Lowy Institute, "Poll 2023: Potential Conflict over Taiwan."; Chicago Council on Global Affairs, "Defending Taiwan."

efforts in these areas risks harming deterrence against China by encouraging doubts about U.S. and allied capacity to follow through on defense objectives in the region. Addressing these challenges, meanwhile, will require sustained and focused attention as well as a commitment to balancing competing priorities.

Finally, although the PLA's substantial strengths in a counter-intervention scenario merit focused attention, they should not be considered without reference to accompanying weaknesses or viewed in isolation. Understanding potential limitations to PLA performance in a counter-intervention scenario, whether from underdeveloped logistics and maintenance systems or from other areas, can be as important for informing U.S. approaches as understanding the PLA's strengths. The PLA's growing ability to challenge U.S. military freedom of operation within the first or second island chains also does not imply a similar level of PLA capability in other domains and scenarios, such as global power projection, indicating that there are still areas of competition where the U.S. military maintains a greater advantage over the PLA.[362] Being prepared to counter PLA threats to U.S. interests across a wide range of domains and scenarios may involve tradeoffs, and weighing those competing priorities will require U.S. policymakers to have an in-depth understanding of the requirements in each case.

ENDNOTES FOR CHAPTER 8

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2. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2023*, October 19, 2023, 87–91.

3. Andrew Krepinevich, Barry Watts, and Robert Work, "Meeting the Anti-Access and Area-Denial Challenge," *Center for Strategic and Budgetary Assessments*, 2003, 3–5.

4. Thomas Shugart, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 3–7; J. Michael Dahm, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners*, March 21, 2024, 31–35; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2023*, October 19, 2023, 87–90.

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7. China Aerospace Studies Institute, *In Their Own Words: 2019 China's National Defense in the New Era*, March 16, 2021; State Council Information Office of the People's Republic of China, *China's Military Strategy*, May 2015; Information Office of the State Council of the People's Republic of China, *The Diversified Employment of China's Armed Forces*, April 16, 2013; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2010*, March 31, 2011; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2008*, January 20, 2009; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2006*, December 2006; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2004*, December 2004; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2002*, December 2002; Information Office of the State Council of the People's Republic of China, *China's National Defense in 2000*, October 2000.

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PART IV

TAIWAN AND HONG KONG

CHAPTER 9: TAIWAN

Abstract

China's actions toward Taiwan in 2024 have been intended to signal strong discontent with the new administration of Lai Ching-te, a president whom the Chinese Communist Party (CCP) regards as a "separatist" challenging Beijing's stated aspiration to "reunify" Taiwan with the Mainland. China has sustained a high level of military, diplomatic, and economic pressure toward the ruling Democratic Progressive Party (DPP) of Taiwan, timing actions around events both to undermine DPP leadership and to extend olive branches to opposition figures who signal support for closer cross-Strait relations. The CCP has expanded its toolkit of tactics for intimidating Taiwan, including greater usage of the China Coast Guard (CCG) around the outlying islands, new guidelines for punishing "separatists," and heightened harassment of Taiwan travelers to the Mainland. Taiwan has enhanced its defensive capacity through U.S. assistance and its own internal reforms, with an increased focus on military and societal resiliency. Taiwan's military continues to take notable steps to develop, manufacture, and adopt asymmetric systems and improve training for conscripts and reservists, but domestic factors and China's near-daily coercion remain challenges to this progress. Despite China's aggressive posture, Taiwan's vibrant and advanced economy has performed strongly this year, thanks to substantial global demand for its high-value exports integral to artificial intelligence (AI) and technology supply chains. U.S.-Taiwan relations remain constructive and robust, with the United States continuing to signal and provide steadfast support for Taiwan in a variety of ways.

Key Findings

- Lai's election to the presidency signals broad support for his policies among Taiwan's populace; however, the DPP's losses in Taiwan's legislature may restrain the Lai Administration's agenda. Beijing reacted to Taiwan exercising its right to self-governance with immediate, extreme rhetoric as well as policy adjustments aimed at intimidating Taiwan. China escalated its indirect threats against not only Taiwan's leadership but also its international supporters by defining "separatism" in law as a crime punishable by death in certain circumstances.

- China has refused to communicate directly with the new DPP president and has chosen to intensify its political coercion efforts against Taiwan, suggesting that the frigid relationship between the DPP Administration and the Mainland will persist. Rather, the CCP has shown that it would prefer to go around the Lai Administration by interacting with opposition parties and interfering in Taiwan's political system.
- China has intensified its military coercion around Taiwan, aiming to gain operational experience, degrade the Taiwan military's readiness, and intimidate the island's population while routinizing its increased presence. The People's Liberation Army (PLA) launched its second named military exercise around Taiwan immediately after Lai's inauguration in May, as well as a follow-on exercise in October, and continued to violate the island's air defense identification zone (ADIZ) on a near-daily basis with conventional aircraft, drones, and balloons.
- Beijing has also expanded its use of so-called "gray zone" tactics—blurring the line between military and non-military actions—against Taiwan in the maritime and air domains under the guise of law enforcement and administrative activity in an attempt to propagate its claim that Taiwan and the Taiwan Strait are its territory. The CCG's robust role in the May PLA exercise was novel and suggested that the CCG could augment future PLA operations against Taiwan. The reported presence of CCG ships around Taiwan's outlying islands outside the context of a PLA exercise is similarly concerning, laying the groundwork for a more persistent presence and representing an attempt to extend "lawfare" to its gray zone activities. China's unilateral modifications of civilian flight paths in the Taiwan Strait also abrogated a prior commitment made in 2015 to allay Taiwan's security concerns, increasing the risk of an air accident and furthering its efforts to nullify the median line.
- Taiwan continues to shore up its remaining diplomatic partners in the face of Chinese pressure to break ties while deepening its unofficial relationships with major countries in North America, Europe, and Asia. Using various points of leverage and influence, Beijing has engaged in an effort to get other countries to endorse its false claim that the 1971 UN General Assembly (UNGA) Resolution 2758 recognizes China's sovereignty over Taiwan as a matter of international law and to make statements supportive of China's unification goals for Taiwan.
- Taiwan's economy performed strongly in 2024, with AI-fueled demand for leading-edge chips and other high-tech manufactured products bringing about a surge in exports and a runup in the domestic stock index. This growth came as cross-Strait trade tensions heightened in the form of China's Ministry of Finance revoking preferential tariff exemptions on 134 products Taiwan exports to the Mainland in a move announced less than two weeks after Lai's inauguration.
- Approved outbound foreign direct investment (FDI) from Taiwan into the Mainland fell 39.8 percent year-over-year in 2023

to its lowest level in over 20 years. Meanwhile, approved FDI from Taiwan into the United States surged 791 percent in the same time period to $9.7 billion, a record high. In April 2024, Taiwan Semiconductor Manufacturing Company announced it would expand its planned investment in the United States over 60 percent to $65 billion after receiving a $6.6 billion federal grant as part of the CHIPS and Science Act.

Recommendations

The Commission recommends:

- Congress amend the Arms Export Control Act of 1976 to include Taiwan on the list of "NATO Plus" recipients.
- Congress create a "Taiwan Allies Fund" that would provide foreign assistance only to countries that have an official diplomatic relationship with Taiwan. No country could receive more than 15 percent of the appropriated funding each year. Countries that no longer have a diplomatic relationship with Taiwan would immediately be ineligible for this funding.

Introduction

Taiwan's new president, Lai Ching-te, was inaugurated on May 20, 2024, with Beijing refusing to engage directly and actively waging a political warfare campaign designed to discredit the new administration.[1] Three days after the inauguration, China conducted a military exercise, Operation Joint Sword 2024A, that simulated surrounding Taiwan in preparation for an invasion or blockade, as it has done every year since 2022. Beijing also stepped up economic coercion in the weeks following Lai's inauguration by revoking preferential trade tariffs on over 100 products, rolling back decades-old cross-Strait trade arrangements.[2] Despite high tensions, Taiwan's economy was resurgent in 2024, posting strong economic growth figures fueled by booming demand for cutting-edge semiconductors used to train AI.[3] This chapter analyzes developments in Taiwan's politics, security, and economy between late 2023 and late 2024. It is based on the Commission's consultation with experts, open source research, and fact-finding travel.

Cross-Strait Political Relations Remain Dismal as Taiwan Elects New DPP Government

At the beginning of 2024, Taiwan's voters went to the polls to choose a new president from among three political parties and elected then Vice President Lai Ching-te of the DPP to be Taiwan's next leader. Despite Lai's success in the presidential election, the DPP lost its majority in Taiwan's legislature, leaving the island with a divided government in which the DPP must work with the opposition parties to enact Lai's legislative agenda.[4] Beijing responded to Lai's election with protests, as it had expressed extreme antipathy toward his candidacy during the run-up to the election and waged an intense disinformation campaign to persuade Taiwan's voters that electing Lai would lead to war.[5] In the months afterward, Beijing has doubled down on its coercive rhetoric, interference activities, and refusal to engage constructively with the DPP-led government

while continuing to host and talk with Taiwan's opposition parties.[6] Lai has pledged to continue the previous Tsai Administration's policies and expressed a desire to engage constructively with the Mainland while protecting Taiwan's democracy and autonomy.[7] Taiwan's government and civil society continue to combat the CCP's attempts to subvert the elected government, polarize the public, and pollute the media environment with false narratives.[8]

Chinese Influence Campaigns Fail to Sway Taiwan's Election

Chinese officials sought to dissuade Taiwan voters from electing Lai by denouncing him with harsh official rhetoric and likely directing robust influence and disinformation campaigns. These efforts ultimately failed to alter the outcome. According to Taiwan security officials, senior Chinese leaders held a meeting in early December 2023 to coordinate efforts to sway the 2024 elections in Taiwan.[9] The meeting, which was led by fourth-ranked Politburo Standing Committee member Wang Huning, reportedly discussed the roles of various agencies in influencing Taiwan's election.[10] The meeting resulted in a plan that the CCP's Propaganda Department and a PLA psychological warfare unit would conduct influence campaigns through news outlets and social media, while the Taiwan Affairs Office and United Front Work Department would engage with Taiwan politicians and provide Taiwan citizens living in the Mainland with discounted airline tickets to fly home to vote.[11] During Taiwan's presidential campaign, China's Taiwan Affairs Office warned voters that they faced a choice between war and peace, implying that Lai's election could provoke a war.[12] In the aftermath of a debate among Taiwan presidential candidates in late December 2023, China's Taiwan Affairs Office spokesperson Chen Binhua asserted that Lai had "exposed his true face as a stubborn 'worker for Taiwan independence' and destroyer of peace across the Taiwan Strait," continuing a trend in Chinese official statements of mischaracterizing Lai's positions and describing him as a "troublemaker" and "separatist."[13]

U.S. cybersecurity firms also documented a notable uptick in Chinese state-sponsored disinformation campaigns targeting Taiwan's media environment, some of which involve the use of AI-generated content. According to a report by Microsoft Threat Intelligence, Chinese state-linked cyber actors conducted an influence campaign to dissuade Taiwan's voters from choosing Lai, constituting what Microsoft says is the first time it has ever observed nation-state actors using AI in an attempt to influence a foreign election.[14] Microsoft highlights cyber actors such as Storm-1376, which it says used AI to generate memes spreading fake news, falsify images, and create deepfakes of presidential candidates.*[15] Storm-1376's online disinformation campaign

*Storm-1376 (also known as "Dragonbridge" or "Spamouflage") also targeted other actors in Taiwan's political scene and election. For example, it reportedly created and amplified a defamatory video series about then President Tsai using AI-generated news anchors and ByteDance's CapCut video editing app. On the presidential election day in January, Storm-1376 posted likely AI-generated audio clips of Foxconn owner Terry Gou, formerly an independent candidate in the presidential race. The audio manipulates Mr. Gou's voice to make it sound as though he is endorsing Kuomintang (KMT) candidate Hou You-yi, even though he never formally endorsed any

Chinese Influence Campaigns Fail to Sway Taiwan's Election—*Continued*

included promotion of AI-generated memes suggesting Lai was corrupt and an AI-generated news anchor who delivered a report containing false information about Lai.[16] Blackbird.AI, a cyber threat intelligence firm, also released a report that identifies several narratives that China-linked influence actors attempted to perpetuate during the election cycle.[17] These include narratives that Taiwan's public is anti-DPP and pro-PLA, that only China can stop the United States from turning Taiwan into a warzone, and that Taiwan's independence would harm stability in Asia.[18]

Taiwan's government and civil society have responded vigorously to China's cognitive warfare campaign. In February 2024, Taiwan prosecutors charged two Taiwan citizens for allegedly fabricating and disseminating bogus opinion polls at the direction of the CCP in an attempt to influence the election, with one individual fabricating surveys and another publishing those surveys via a media company established in Taiwan after a visit to the Mainland.[19] Nonprofits such as the Information Environment Research Center (originally Information Operations Research Group) and Doublethink Lab continue to educate Taiwan's public on media literacy and expose influence operations, while the grassroots civic group Cofacts operates an online fact-checking chatbot.[20] Taiwan's government has also established a dedicated election-related fake news task force reportedly able to provide factual clarification within four hours of detection, releasing responses on multiple internet platforms.[21]

Lai Triumphs Electorally and Beijing Responds with Anger and Coercion

Lai's election as Taiwan's president represents the first time any of Taiwan's political parties has won a third consecutive presidential term and reflects public support for a leader who would stand up to Beijing's coercion.[22] Lai defeated his opponents Hou You-yi, the mayor of New Taipei who ran as the Kuomintang (KMT) candidate, and Ko Wen-je, the former mayor of Taipei who ran as the Taiwan People's Party (TPP) candidate.*[23] The candidates presented differing visions for cross-Strait relations on the campaign trail: while Lai maintained that negotiations with Beijing should only proceed if the two sides engage as equals and if the status quo of Taiwan's de facto autonomy is maintained, Hou and Ko both struck more conciliatory notes, favoring the reestablishment of cross-Strait dialogue without preconditions and a relationship based on shared cultural values and pragmatism, respectively.[24] Lai won with over 40 percent of the vote in Taiwan's first-past-the-post electoral system, though he

presidential candidate in the race. Microsoft Threat Intelligence, "Same Targets, New Playbooks: East Asia Threat Actors Employ Unique Methods," April 2024, 6–8.

*Founded by then Taipei City Mayor Ko Wen-je in 2019, the TPP markets itself as a pragmatic party focused on domestic economic issues and government reform. Lillian Ellis, "Youth TPP Support Explained: A Shift from China to Domestic Economic Concerns," *Global Taiwan Institute*, August 7, 2024; Brian Hioe and Lev Nachman, "From Green to Blue: The Political History of Ko Wen-je," *Diplomat*, November 28, 2023; Taiwan People's Party, *About Us*.

garnered a smaller proportion of the vote than his predecessor President Tsai Ing-wen, who was reelected with more than 50 percent of the vote in 2020.[25] Hou and Ko earned 33 percent and 26 percent of the vote, respectively.[26]

At the same time, the DPP lost its majority in the Legislative Yuan, resulting in a divided government that could complicate Lai's legislative agenda. For the first time since 2004, no single party has an absolute majority in the national legislature (57 seats): the DPP won 51 seats, the KMT won 52 seats, and the TPP won eight seats.[27] As a result, the TPP will act as a swing vote and play a pivotal role in the legislature.[28] The Legislative Yuan divisions will likely complicate the Lai Administration's efforts to authorize or fund new policies relating to the Mainland, including defense spending increases and new weapons acquisitions.[29] The last time a DPP president headed a divided government—under then President Chen Shui-bian—the KMT-led legislature was often able to obstruct the defense procurement process, successfully blocking the purchase of surveillance aircraft and Patriot missiles from the United States from 2004 to 2007.[30]

Beijing Tries to Delegitimize Lai's Win, Asserts "Reunification" Is Inevitable

Chinese officials and government agencies reacted to Lai's election by attacking his legitimacy, implying foreign interference, and asserting the result would not change what they claimed was the inevitable trend of cross-Strait relations toward a unified Taiwan and China. China's Taiwan Affairs Office immediately rejected Lai's victory, asserting that the DPP does not represent mainstream public opinion on the island.[31] Chinese state media articles also spun the unprecedented victory as an effective loss of support for the DPP. For example, one January 20, 2024, commentary by Xinhua argues that Lai "only received 40.05% of the votes, which can be described as a 'miserable victory,'" and it means that 60 percent of public opinion in Taiwan . . . demands [the] 'removal of the DPP.'"[32] The commentary claims public opinion is "drifting away from the DPP" primarily because of its "incompetence in governance, universal corruption, [and] innumerable scandals" as well as economic issues.[33] On January 14, 2024, the day after the election, Wang Yi, China's foreign minister and director of the CCP's Central Committee Foreign Affairs Commission Office, also issued a warning against any declaration of "independence" and stated, "Taiwan has never been a country. It wasn't in the past, and it certainly won't be in the future."[34] On January 16, 2024, China's Ministry of State Security also issued a statement on its official WeChat account, alleging that Taiwan's government and intelligence were serving as "thugs" for "'Taiwan independence' separatist forces" and unreasonably "hyping" the Mainland's interference in Taiwan's elections.[35]

Lai's Inaugural Speech Stresses Consistency but Still Aggravates Beijing

During his inaugural address on May 20, 2024, Lai signaled a broad continuation of the Tsai Administration's approach to cross-Strait relations, making clear he would protect Taiwan's democracy.

Lai stated that his priorities will be to continue the prior administration's efforts to achieve sustainable peace between Taiwan and China and to continue collaboration with democratic countries to strengthen resilience in the face of challenges from authoritarian regimes.*[36] Like President Tsai, Lai expressed his openness to dialogue with Beijing and pledged to uphold the previous government's "Four Commitments" for cross-Strait relations, which include cross-Strait engagement on the basis of equality, protecting Taiwan's democracy, resisting annexation, and deciding Taiwan's future on the basis of popular will.†[37] He also stated his commitment to maintaining "the status quo" in the Taiwan Strait while promising to "neither yield [to] nor provoke" Beijing.‡[38] Lai suggested that the first step to resuming constructive relations with Beijing could include recommencing tourism and student exchanges.[39] He also promoted his "Four Pillars of Peace action plan," which consists of strengthened national defense, improved economic security, "stable and principled cross-Strait leadership," and "values-based diplomacy."[40]

Notably, Lai was more explicit than his predecessor in condemning Beijing's destabilizing behavior and appealing to the global community for help. He directly highlighted China's aggressive behavior toward the island and called upon its leadership "to cease their political and military intimidation against Taiwan."[41] Lai told Taiwan citizens to "not harbor any delusions" regarding the possibility of peace with Beijing, noting that "so long as China refuses to renounce the use of force against Taiwan, all of us in Taiwan ought to understand, that even if we accept the entirety of China's position and give up our sovereignty, China's ambition to annex Taiwan will not simply disappear."[42] He also framed cross-Strait tensions as a global problem and called on the island to stand with other democracies in forming "a peaceful global community that can demonstrate the strength of deterrence and prevent war."[43]

Although the substance of President Lai's speech closely tracked previous statements by Taiwan's leaders, Beijing sought to portray it as a new, provocative "confession of 'Taiwan independence'" and alleged that President Lai flagrantly promoted separatist ideas and incited cross-Strait tensions.[44] Lai omitted a reference to the 1992 Consensus, a formulation the CCP claims was reached between mainland China and Taiwan representatives decades ago that asserts the two sides of the Taiwan Strait are part of "One China."§[45]

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*He also highlighted the DPP's domestic priorities, such as addressing housing pressure for young people and resolving issues related to labor insurance funds. Office of the President, Republic of China (Taiwan), *Inaugural Address of ROC 16th-Term President Lai Ching-te*, May 20, 2024.

†The "Four Commitments" is an approach to cross-Strait policy proposed by then President Tsai in her 2021 National Day address. The commitments are to "a free and democratic constitutional system"; that "the [Republic of China] ROC (Taiwan) and the PRC should not be subordinate to each other"; to "resist annexation or encroachment upon our sovereignty"; and that "the future of the ROC (Taiwan) must be decided in accordance with the will of the Taiwanese people." Taiwan's government asserts that these commitments reflect mainstream public opinion toward cross-Strait relations. Government of the Republic of China (Taiwan), *Cross-Strait Relations*.

‡Taiwan's "status quo" is defined by de facto independence while neither seeking nor acknowledging official statehood. Lev Nachman and Brian Hioe, "No, Taiwan's President Isn't 'Pro-Independence,'" *Diplomat*, April 23, 2020.

§The 1992 Consensus is an understanding allegedly reached at a 1992 meeting between representatives of two quasi-official organizations that manage cross-Strait relations: China's Association for Relations Across the Taiwan Straits (ARATS) and Taiwan's Straits Exchange Foundation (SEF) (then associated with a government under the KMT's one-party rule). The term "1992 Consensus" was coined in the year 2000 by then Mainland Affairs Council (MAC) Chairman Su Chi

Beijing has insisted upon acknowledgment of the 1992 Consensus as the precondition for constructive relations, while prominent figures of the DPP have publicly questioned its existence.[46] In her 2016 inaugural speech, then President Tsai had described "various joint acknowledgements and understandings" reached at the 1992 meeting as a "historical fact" that was one of many elements underpinning the "existing political foundations" of cross-Strait relations, though she did not say that any "consensus" had been reached.[47]

Chinese state media placed the blame for current cross-Strait tensions on Lai in part for refusing to acknowledge the 1992 Consensus.[48] State-run media accused Lai of spreading "deceitful political lies," stating that he was worse than his predecessors and calling him a pawn of the West.[49] Minister Wang was vitriolic in his response, emphasizing that efforts for "Taiwan independence" posed the most significant threat to cross-Strait stability and that "all 'Taiwan independence' separatists are set to be nailed to the pillar of shame in history."[50]

Chinese Officials Reiterate Preference for "Peaceful Reunification" but Suggest United States Is Trying to Trick China into War

Despite the vitriolic rhetoric directed toward Lai personally, top Chinese officials have generally continued to claim in remarks before internal and external audiences their continued preference for a "peaceful" path to unification under the "one country, two systems" framework.[51] There have been some notable exceptions to this formulation, however. Some U.S. observers have pointed out the omission of "peaceful reunification" from Premier Li Qiang's *Work Report to the 14th National People's Congress* in March 2024 and in fourth-ranked Politburo Standing Committee member Wang Huning's speech at the 16th Straits Forum, raising questions about a potential change in cross-Strait policy.[52] Xi and other Chinese officials have continued to use this formulation, however, underscoring that official policy has not changed. During his April 2024 meeting with former Taiwan President Ma Ying-jeou, for example, Xi asserted that the two sides of the Strait should jointly pursue "peaceful reunification."[53] Similarly, at a seminar in May 2024 on the "One China principle" hosted by the

under the KMT administration of Lee Teng-hui, who said that it referred to the idea that both sides agreed there is only "one China" but that each side maintained its own differing interpretation of the meaning of "one China" (leaving open the question of whether that "China" was the Republic of China under the KMT or the People's Republic of China under the CCP). The 1992 Consensus was first adopted by the KMT in 2008 under the administration of Ma Ying-jeou, and it was most recently reaffirmed in 2021 under current KMT Chairman Eric Chu. Leaders of the DPP such as Tsai Ing-wen have questioned the existence of any consensus reached at the 1992 meeting and argued that the 1992 Consensus framework does not reflect the will of the Taiwan public, since it was reportedly reached prior to the island's democratization. In a 2019 speech, General Secretary Xi equated the 1992 Consensus with "one country, two systems." Since that time, CCP events and statements have clarified that when they refer to the 1992 Consensus, it means accepting Taiwan's unification with the Mainland. Beijing maintains that the agreement does not allow for different interpretations of "one China" in the first place. Jessica Drun, "The KMT Continues to Grapple with Its '1992 Consensus,'" *Global Taiwan Institute*, September 21, 2022; John Dotson, "The CCP Commemorates the 30th Anniversary of the '1992 Consensus"—and Seeks to Change Its Meaning,'" *Global Taiwan Institute*, September 21, 2022; Derek Grossman, "Where Does China's 'One Country, Two Systems' Stand in 2020?" *RAND Corporation*, February 13, 2020; Derek Grossman and Brandon Alexander Millan, "Taiwan's KMT May Have a Serious '1992 Consensus' Problem," *RAND Corporation*, August 9, 2004.

Chinese Officials Reiterate Preference for "Peaceful Reunification" but Suggest United States Is Trying to Trick China into War—*Continued*

consul general of China in Osaka, Japan, Xue Jian elaborated that "peaceful reunification" and "one country, two systems" is the "basic policy" of the Chinese government to resolve the Taiwan issue.[54]

Beijing has also reiterated its longstanding claims that the United States and other outsiders are encouraging Taiwan to pursue independence, though it has begun to assert that the United States desires or is even seeking to provoke a Chinese attack on Taiwan.*[55] Speaking at the Asia Society in January 2024, former Chinese Ambassador to the United States Cui Tiankai stated that Beijing would not fall into the trap "somebody" may be preparing for China involving Taiwan, making a veiled reference to the United States.[56] "They will supply military assistance, they will supply weapons for proxy war, and the Chinese will be killing Chinese," former Ambassador Cui said of the supposed ploy by another country to trick China into a war with Taiwan.[57] In June 2024, the *Financial Times* broke a story that Xi reportedly told European Commission President Ursula von der Leyen during a meeting in April 2023 that the United States was attempting to goad Beijing into attacking Taiwan.[58] The media outlet also claims Xi told President von der Leyen he would not "take the bait" because a conflict with the United States would destroy many of China's accomplishments and undermine his goal of achieving national rejuvenation by 2049.[59] Xi's remark to President von der Leyen is the first known case of him making such a claim to a foreign leader, although he has reportedly delivered the same message to domestic officials.[60] U.S. analysts have offered differing interpretations of Xi's remarks. Jude Blanchette, Freeman Chair in China Studies at the Center for Strategic and International Studies, suggests this may indicate Xi is not receiving accurate information about U.S. intentions, while Bonnie Glaser, managing director of the German Marshall Fund's Indo-Pacific program, argues that the statement was propaganda potentially intended to divide Europe and the United States over Taiwan.[61]

Post-Inauguration, Beijing Continues Subversion and Intimidation Campaign

Although Lai's inauguration proceeded without major incident, Beijing continued its multifaceted efforts in the months afterward to subvert and undermine Taiwan's elected government in hopes it can weaken the DPP and lay the groundwork for eventual unification. Specifically, it conducted influence activities targeting Taiwan's

*Signs of this disturbing trend became evident as early as 2023. For example, a September 2023 broadcast sponsored by the PLA reportedly claimed that the United States had increased military assistance to Taiwan in order to replicate its "proxy war" in Ukraine. An August 2023 story ran in *China Daily Hong Kong* asserting that the United States was actively attempting to draw China into a "Taiwan quagmire." Jeff Pao, "PLA Claims US Stirring Ukraine-Like 'Proxy War' for Taiwan," *Asia Times*, September 13, 2023; Michael Whitney, "Target China: US Plans to Goad Beijing into Taiwan War," *China Daily Hong Kong*, August 13, 2023.

civil society, engaged with Taiwan's opposition parties, and unveiled new criminal regulations designed to intimidate DPP supporters and others it considers "pro-independence" in and outside Taiwan.

Beijing Tries to Create Appearance of Grassroots Support for Unification

Beijing is attempting to undermine the DPP Administration by ramping up its influence activities—often referred to by the Party as "united front work"*—targeting Taiwan's civil society and political life. Two days after Lai's election in January 2024, the CCP's ideological journal *Qiushi* made public parts of a 2022 speech by Xi that extolled the Party to use united front work to develop and strengthen pro-unification forces in Taiwan, oppose "Taiwan independence," and promote "the complete reunification of the motherland."[62] Director-General of Taiwan's National Security Bureau Tsai Ming-yen stated in May 2024 that the CCP is increasing its efforts to strengthen ties with people from various segments of Taiwan's society, including legislators and religious, cultural, and business groups.[63] Director-General Tsai notes that a growing number of Taiwan artists working in China were being coerced into publicly expressing pro-unification positions and that the CCP forces Taiwan individuals working in China to sign consent forms committing them to promote a unification agenda, threatening tax audits and other punitive actions if they do not comply.[64] In June 2024, Taiwan's Ministry of the Interior issued a warning based on media reporting that the CCP attempted to induce Taiwan nationals to form political parties.[65] Taiwan celebrities R-Chord and Alexis Ho accused a Chinese company, Beijing Ciguang Film and Television Media Co., Ltd., of attempting to persuade them to establish a "Taiwan Pro-Peace Party" for the purpose of establishing "a new type of cross-strait relations."[66] Taiwan's Ministry of the Interior noted that forming or funding political parties at the behest of a hostile foreign actor is in violation of Taiwan's Political Party Act and Anti-Infiltration Act.[67] The ministry stated it had knowledge that other minor political parties in Taiwan, such as the Taiwan Republican Party and the Taiwan People's Communist Party, were suspected of receiving funding and directives from the CCP.[68] Under Taiwan's Political Party Act, the Ministry of the Interior had deregistered 65 political parties in Taiwan suspected of violating the act by being funded or directed by the CCP.[69]

In response to these activities, Taiwan's government has made or considered updates to existing foreign interference laws. In May 2024, Taiwan broadened the types of CCP-affiliated organizations from which Taiwan citizens are banned by updating the Act Governing Relations between the People of the Taiwan Area and the Main-

*"United front work" is a way of managing relationships with important groups and individuals outside of the CCP that is based on Russian revolutionary Vladimir Lenin's concept of forming a "united front," or a temporary alliance with one's friends and lesser enemies, to defeat greater enemies. Contemporary united front work encapsulates the various activities of CCP organs, Chinese government agencies, and their affiliates to coopt or coerce groups outside of the CCP into comporting with the Party's demands and advancing Chinese national interests as the CCP defines them. U.S.-China Economic and Security Review Commission, *2023 Annual Report*, November 14, 2023, 230. Alex Joske, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Global Influence and Interference Activities*, March 23, 2023, 2; Peter Mattis, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on China's Global Influence and Interference Activities*, March 23, 2023, 2–4.

land Area.[70] According to the updated law, Taiwan citizens are now prohibited from membership in any CCP organization or proxy that conducts united front work against Taiwan or is considered a threat to its national security or interests, including entities such as the Association for Relations Across the Taiwan Straits (ARATS) and Confucius Institutes.*[71] There has also been debate among Taiwan's political parties about whether to relax or strengthen Taiwan's 2020 Anti-Infiltration Act. KMT officials, including former President Ma Ying-jeou, have called to relax the act on the grounds that it could be used to infringe on human rights and inhibit cross-Strait exchanges, while DPP legislators have previously proposed strengthening the act to combat political parties that collaborate with malign actors.[72] A May 2024 poll conducted by Taiwan's Mainland Affairs Council suggests that a majority of respondents support an expansion of the act to combat the CCP's intensified united front work activities, with 55 percent of respondents supporting measures to strengthen the act.[73]

Beijing Continues to Engage Opposition Parties as Political Alternative

Beijing has sought to strengthen its ties with Taiwan's opposition parties in a bid to cultivate alternative interlocuters across the Strait and undermine the DPP. According to National Security Bureau Director-General Tsai, Taiwan security officials noticed an uptick in CCP exchanges with members of both the KMT and the TPP after the January election.[74] Notably, Beijing has continued to host current and former KMT officials in cross-Strait meetings. In April 2024, former Taiwan President Ma of the KMT visited mainland China for 11 days, the second such trip he has undertaken in two years.[75] Ma was accompanied by a student delegation and spent much of his trip stressing that Chinese and Taiwan people share a mutual cultural identity.[76] Ma held a meeting with Taiwan Affairs Office Director Song Tao, during which Song called for more frequent cross-Strait exchanges and urged joint endeavors to rejuvenate the Chinese nation, oppose "Taiwan independence," and counter foreign interference.[77] Ma also received an audience with Xi, who asserted that "compatriots on both sides of the Taiwan Strait must resolutely oppose 'Taiwan independence' separatist activities and interference by external forces" and "jointly pursue a beautiful future of peaceful reunification."†[78] Ma said that adhering to the 1992 Consensus and opposing "Taiwan independence" are the "common political founda-

*The Association for Relations Across the Taiwan Straits is a quasi-official government organization set up by China's Taiwan Affairs Office through which the Mainland has formally handled cross-Strait contact with Taiwan. Confucius Institutes are organizations located at educational establishments funded and directed by the Chinese government to promote a CCP-approved vision of China through educational and cultural programs. Center for Strategic and International Studies, "Glossary"; Government Accountability Office, *China: With Nearly All U.S. Confucius Institutes Closed, Some Schools Sought Alternative Language Support*, October 30, 2023; Thomas Lum and Hannah Fischer, "Confucius Institutes in the United States: Selected Issues," *Congressional Research Service*, IF11180, May 2, 2023; Fukuda Madoka, "The Characteristics of Xi Jinping's Policy-Making on Taiwan Affairs: The Conflict between Institutionalization and Centralization," *Journal of Contemporary East Asia*, 11.2 (February 19, 2023): 244–263.

†China's state media have repeatedly published pieces that condemn the DPP for its "de-Sinicization" of Taiwan and carrying out "anti-Chinese cultural education" through revisions to textbooks and educational reform, accusing the DPP of attempting to erase Taiwan's Chinese cultural identity. *China Daily*, "'Taiwan Independence' Ideology Condemned," May 21, 2024; *Xinhua*, "Mainland Slams DPP's 'De-Sinicization' Attempts in Education Sector," December 13, 2023.

tion for the peaceful development of cross-strait relations," implying that the KMT is capable of engaging with Beijing because of its embrace of the 1992 Consensus, as opposed to the DPP.[79] Ma later described his meeting with Xi in glowing terms in an August 2024 speech to an overseas Chinese association in Thailand.[80] Ma described Xi's attitude as "soft and gentle" and said the Chinese leader claimed that anything can be discussed between Taiwan and China so long as "both sides recognize themselves as part of the Chinese nation."[81] Ma went on to blame President Lai and the DPP for deteriorating cross-Strait relations and rejecting Xi's "goodwill."[82]

Another notable way Beijing engages opposition parties is through its annual Straits Forum in Xiamen, Fujian Province.* In June 2024, KMT and TPP officials attended the 16th Straits Forum despite Taiwan's Mainland Affairs Council issuing a warning that the event is a tool for the CCP's united front work.[83] At the event, KMT Vice Chairman Lian Sheng-wen claimed that most of Taiwan's populace does not support Taiwan independence and that the KMT would continue to develop good relations between Taiwan and the Mainland.[84] Vice Chairman Lian said that both sides should strengthen youth exchanges and are both members of a "Chinese nation."[85]

Despite this engagement, Taiwan's main opposition party maintains that it is willing to defend the island's interests from encroachment by Beijing. As the KMT's traditional stance on relations with China becomes less appealing to Taiwan's electorate, a younger, "light blue" generation of the KMT has embraced positions closer to the DPP's policy platform, in contrast to the older "deep blue" generation of the KMT.[86] While KMT leaders have repeatedly expressed support for their own interpretation of the 1992 Consensus, KMT officials have also claimed support for maintaining the "status quo" in cross-Strait relations, and during the 2024 election Hou publicly opposed China's "one country, two systems" framework for unification.[87] KMT officials say they favor stronger defense cooperation with the United States and the adoption of asymmetric capabilities.[88] According to KMT officials, they believe their party is better positioned to serve as a productive interlocuter with Beijing.[89] Domestically, the KMT seeks to leverage its advantageous position in the Legislative Yuan to empower the legislature to conduct greater oversight of the executive branch, and it seeks to increase its appeal among Taiwan's youth voters by focusing on domestic economic issues.[90]

New Intimidation Tactics: Special Punishments for Taiwan "Separatists" and Harassment of Travelers

In 2024, China announced new guidelines for punishing supposed supporters of "Taiwan independence," which has been interpreted as an attempt to intimidate Taiwan residents and even foreigners involved with Taiwan. In June 2024, China's Supreme People's Court, the Supreme People's Procuratorate, the Minis-

*First held in 2009, the Straits Forum is an annual conference that serves as the centerpiece of China's outreach toward Taiwan. Its official purpose is to facilitate people-to-people exchanges on both sides of the Taiwan Strait. China's Taiwan Affairs Office claimed that this year the forum would be attended by 7,000 Taiwan nationals. Yanyue Dang, "Taiwan: Forum Reveals State of Cross-Strait Travel and How to Boost It," *South China Morning Post*, June 17, 2024.

try for Public Security, the Ministry of State Security, and the Ministry of Justice jointly published guidelines officially designating "Taiwan independence" as a crime and laying out the punishments for such a crime.[91] Punishable acts include the denial of Beijing's claim that Taiwan is part of China, the promotion of Taiwan's participation in international organizations, leading a "Taiwan independence secessionist organization," and attempting to change Taiwan's status through legal means in Taiwan.[92] Suspects could be tried in absentia and sentenced to punishments that include detention, prison terms ranging from three years to life, confiscation of possessions, and even the death sentence.[93] Chinese state media describe the new regulations as a "refinement" of China's Anti-Secession Law in response to Lai's election that should act as a warning to "external forces who would not keep their hands off affairs related to Taiwan."[94] Notably, the guidelines do not specify that they are only applicable to Taiwan's citizens and could hypothetically apply anywhere to anyone Beijing views as encouraging Taiwan independence in ways identified by the law.[95] In August 2024, China's Taiwan Affairs Office and Ministry of Public Security launched websites denouncing a list of current and former Taiwan officials as "diehard secessionists" and calling for people to report "clues" and alleged crimes committed by those on the list.[96] The sites also encourage reporting new "'Taiwan independence' diehards who commit serious crimes."[97] Two months after the publication of the sentencing guidelines, a mainland court sentenced a Taiwan activist to nine years in prison for political activities carried out in Taiwan, marking the first known case of China's authorities convicting an individual from Taiwan with "separatism."[98] Because the law effectively includes an aiding and abetting provision, the new guidelines may have a chilling effect on foreign individuals and businesses that have dealings with both China and Taiwan, potentially forcing them to consider whether the individuals from Taiwan they interact with qualify under the provisions.[99]

Moreover, Beijing has increased its intimidation of individuals from Taiwan, further illustrating its propensity for coercion and undermining the appeal of people-to-people exchanges. Beijing's intimidation tactics include temporary detentions and random identification checks of Taiwan citizens visiting China and Hong Kong, such as the following:[100]

- In March 2024, an off-duty soldier in Taiwan's military who was rescued by the CCG while fishing off the coast of Kinmen was detained for allegedly "intentionally conceal[ing] information" about his military affiliation.[101] According to the Mainland Affairs Council, eight retired military and police personnel from Taiwan have been detained in China over the past year.[102]
- In May 2024, a photographer and author from Taiwan was detained and interrogated for "spreading obscene images" while promoting his books documenting the lives of gay men at a book fair in Nanjing.[103] In a separate occasion, a Taiwan national was detained for days while traveling with a tour group in Fujian.[104]

- Taiwan tourists were briefly stopped and interrogated by Hong Kong police on May 30, 2024.[105] These incidents prompted Taiwan's Mainland Affairs Council to issue a travel advisory in June to Taiwan citizens wishing to travel to Hong Kong.[106] The Mainland Affairs Council issued another travel alert for mainland China, Hong Kong, and Macau later that month, responding in part to China's new guidelines for punishing supposed supporters of "Taiwan independence."[107]

China Continues to Apply Military Pressure on Taiwan, Adopts Enhanced Gray Zone Tactics

China continues its multidomain pressure campaign against Taiwan, attempting to hone its operational skills for blockade or invasion and normalize its presence around Taiwan and its outlying islands. As a result, a stronger and more emboldened PLA is crossing the median line* as though it does not exist, conducting frequent air operations inside of Taiwan's ADIZ†, maintaining a consistent presence of naval vessels in the vicinity of Taiwan, and undertaking large-scale military exercises with greater frequency. Alongside these military actions, Chinese officials have increasingly disputed the existence of the median line and passed new regulations that empower the CCG to detain Taiwan vessels throughout the Taiwan Strait.

PLA Exercises around Taiwan Intimidate Populace and Enhance Capabilities

The PLA conducted a military exercise around Taiwan in May 2024 that was designed to demonstrate displeasure with the new Lai government and practice useful operational skills, marking the third year in a row it has conducted exercises at such scale. On May 23, three days after Lai's inauguration, the PLA Eastern Theater Command announced it would be conducting a two-day military exercise around Taiwan and its outlying islands, naming the exercises Joint Sword 2024A.[108] A spokesman for the PLA's Eastern Theater Command stated that the intent of the drills was to "serve as a

*The median line, also known as the center line, is an informal demarcation extending down the middle of the Taiwan Strait. The line was drawn in 1955 by General Benjamin O. Davis, then commander of the U.S. Air Force's Taiwan-based 13th Air Force. While the Chinese government in Beijing never formally agreed to the establishment of the median line, both the PLA and Taiwan's military observed the line in practice. In the decades immediately following the drawing of the median line, Taiwan's military superiority made it too dangerous for PLA aircraft to cross the line. In fact, the Taiwan military also never publicly acknowledged the median line until 1999, when the PLA's first deliberate crossing occurred. With the shift in the cross-Strait military balance in China's favor over the last two decades, Taiwan is no longer able to prevent PLA aircraft from crossing the line. In 2019, two Chinese fighter aircraft intentionally crossed the median line for the first time since 1999. China's continued median line crossings constitute a unilateral change to the cross-Strait status quo. While China's foreign ministry said in September 2020 that the median line did not exist, Taiwan's defense ministry described its existence as a "fact" in August 2022. *Reuters*, "Taiwan Says Strait Median Line Is a 'Fact,'" August 8, 2022; Ralph Jennings, "What Is the Median Line between China and Taiwan?" *Voice of America*, October 28, 2020; U.S.-China Economic and Security Review Commission, Chapter 5, "Taiwan," in *2019 Annual Report to Congress*, November 2019, 449.

†An air defense identification zone (ADIZ) is an area of airspace over land or water in which the ready identification and location of all aircraft is required in the interest of a nation's national security. While Taiwan's claimed ADIZ covers large portions of mainland China, its Ministry of National Defense only reports on aircraft that enter Taiwan's de facto ADIZ. Ben Lewis, "2022 in ADIZ Violations: China Dials Up the Pressure on Taiwan," *Center for Strategic and International Studies*, March 23, 2023; Federal Aviation Administration, *ENR 1.12 National Security and Interception Procedures*.

strong punishment for the separatist acts of 'Taiwan independence' forces and a stern warning against the interference and provocation by external forces."[109] According to the PLA's Eastern Theater Command, the exercises focused on "joint sea-air combat-readiness patrol, joint seizure of comprehensive battlefield control, and joint precision strikes on key targets."[110] U.S. PLA experts speculate the drills served to improve coordination between the PLA and the CCG, practice skills needed for both blockade or invasion scenarios, and intimidate the people of Taiwan.[111] Despite Beijing's assertion that the exercises were a "punishment" in response to Lai's inauguration, Joint Sword 2024A was likely planned in advance.[112] The naming convention of the exercises suggested that Beijing intended to conduct similar drills annually, possibly in multiple stages throughout the year—a suggestion borne out by additional exercises in October 2024.*[113]

Joint Sword 2024A had some notable parallels to prior major exercises conducted in 2022 and 2023 but included novel elements such as the increased participation of the CCG, and on the whole the exercise seemed smaller and less ambitious than prior iterations.† Like the previous two years of exercises, Joint Sword 2024A emphasized "encirclement" exercises encompassing the waters around Taiwan. However, the location and operational skills practiced by Joint Sword 2024A varied somewhat from the exercises in 2022 and 2023. Notable features included:

- *Training focuses on jointness and blockade skills:* According to the Eastern Theater Command, PLA army, navy, air force, rocket force, and other forces practiced joint sea and air combat readiness patrols, "joint seizure of comprehensive battlefield control," joint precision strikes on key targets, and what it described as integrated operations inside and outside of Taiwan to test the actual "joint combat capabilities" of its forces.[114]
- *Exercise locations could facilitate blockade and include outlying islands:* The PLA's eight declared exercise zones included areas that would be crucial to block energy imports or to intercept U.S. military force flows toward the island, and two of them appeared to extend into Taiwan's contiguous zone.[115] In contrast to previous years' focus on the main island of Taiwan, three of these zones were superimposed on Taiwan's outlying islands.[116] During the exercise, the Fujian Province Coast Guard exercised in the waters around the Wuqiu and Dongyin islands "to test its joint patrol, rapid reaction and emergency response capabilities."[117] In a first, CCG patrol vessels entered the waters

*The exercises the PLA conducted in the spring of 2023 were also named Joint Sword. As some military experts have noted, the addition of a year and letter designation suggested that follow-on exercises may be planned in the future. As discussed below, this analysis was correct. John Dotson and Jonathan Harman, "The PLA's Inauguration Gift to President Lai: The Joint Sword 2024A Exercise," *Global Taiwan Institute*, June 12, 2024; Lee Ya-wen et al., "Chinese Military Drills around Taiwan Could Be First in Series: Expert," *Focus Taiwan*, May 23, 2024.

†The PLA launched similar exercises in the air and waters surrounding Taiwan in 2022 following then Speaker of the House Nancy Pelosi's visit to the island, and in 2023 after then Taiwan President Tsai transited the United States. Lee Ya-wen et al., "Chinese Military Drills around Taiwan Could Be First in Series: Expert," *Focus Taiwan*, May 23, 2024; Bonny Lin et al., "Tracking China's April 2023 Military Exercises around Taiwan," *Center for Strategic and International Studies*, 2023.

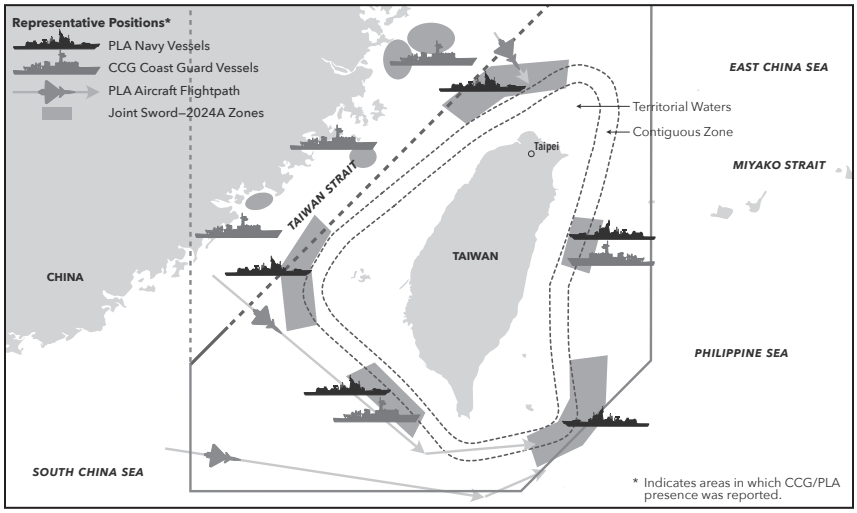
around Wuqiu and Dongyin, reportedly coming as close as 2.8 nautical miles from the Wuqiu islands and as close as 3.1 nautical miles from Dongyin before being warned off by the Taiwan Coast Guard vessels.[118]

- *China Coast Guard joins PLA in exercising around Taiwan in apparent first:* In concert with the PLA exercises, CCG forces conducted a "comprehensive law enforcement exercise" around Taiwan's outlying islands in a potential first, suggesting the CCG could be preparing to assert China's maritime claims in the Taiwan Strait or augment future PLA operations against Taiwan.[119] According to data released by Taiwan's Ministry of National Defense, four CCG ships navigated to the east of Taiwan in proximity to the eastern PLA exercise zone off the Hualien coast, and three CCG ships sailed toward the southwest of Taiwan, close to the southern entrance of the Taiwan Strait.[120] On the first day of the exercises, Taiwan's Ministry of National Defense recorded as many as 16 CCG ships in the vicinity of Taiwan and its surrounding islands.[121] CCG forces reportedly engaged in mock inspections of foreign vessels and exercised the use of a water cannon.[122]
- *No aircraft carrier but some key weapons systems appear:* The PLA did not employ any significant new platforms during the exercises and did not deploy an aircraft carrier group.[123] The Eastern Theater Command did highlight six key PLA weapons systems reportedly deployed in the exercise, namely J-20 and J-16 fighter aircraft, Type 052D destroyers, a Type 071 amphibious transport dock, a Dongfeng series ballistic missile, and a PHL-16 Multiple Rocket Launch System (MRLS).[124]
- *Smaller scale overall, but greater naval component:* Unlike previous years, these exercises reportedly did not feature live fire components.[125] Fewer aircraft were involved than in previous years, with a total of 82 aircraft intrusions into the ADIZ and 74 median line crossings.[126] Similar to the August 2022 exercises, Joint Sword 2024A featured demarcated exercise zones encircling Taiwan, while the 2023 exercises did not.[127] The 2024 exercise did feature more ships in the waters around Taiwan than the 2022 or 2023 exercises, totaling 27 vessels on May 24, including Chinese maritime law enforcement vessels.[128]

As the naming convention suggests, on October 14, 2024, China conducted another large-scale military exercise around Taiwan and its outlying islands called Joint Sword 2024B.[129] According to a spokesperson for the PLA Eastern Theater Command, the one-day drills involved troops from China's army, navy, air force, and rocket force and focused on honing the PLA's ability to blockade Taiwan's ports, attack "maritime and ground targets," and achieve other strategic objectives.[130] The drills were held several days after President Lai delivered an annual address to commemorate the National Day of the Republic of China (Taiwan) on October 10, 2024, and Beijing once again justified the military activity as a response to the "provocations" of "Taiwan independence" forces.[131] Taiwan's Ministry of National Defense announced that a single-day record of

153 PLA aircraft* as well as 14 PLA Navy vessels and 12 "official ships" (such as CCG ships) were detected in the waters and airspace around Taiwan on the day of the drills.[132] Significantly, Joint Sword 2024B also marked the first time the PLA's *Liaoning* aircraft carrier participated in military drills aimed at Taiwan.[133]

Figure 1: Map of the PLA's Joint Sword 2024A Exercises



Note: Map depicting the areas in which China held Joint Sword 2024A exercise this year. Notional flight paths of aircraft are depicted based on commonly followed paths of PLA aircraft. The solid line indicates Taiwan's de facto ADIZ. According to Taiwan's Ministry of National Defense, over the two days of this exercise 111 PLA aircraft conducted violations of Taiwan's de facto ADIZ, and there were 82 median line crossings. As many as 46 PLA vessels took part in the exercise, including as many as 16 CCG vessels around both Taiwan's main and outlying islands.[134]

Source: Bonny Lin and Brian Hart, "How Is China Responding to the Inauguration of Taiwan's President William Lai?" *Center for Strategic and International Studies*, May 24, 2024; *Focus Taiwan*, "No PLA Live-Fire Exercises Detected in Taiwan Strait: Taiwan Military," May 23, 2024; China's Ministry of National Defense, *The Eastern Theater Command Released a Diagram of the "Joint Sword-2024A" Exercise Area* (东部战区发布"联合利剑—2024A"演习区域示意图), May 23, 2024. Translation; Republic of China (Taiwan) Ministry of National Defense, *PLA Activities in the Waters and Airspace around Taiwan* (中共解放軍臺海周邊海、空域動態), May 23–25, 2024. Translation.

Exercises like Joint Sword 2024A will likely become recurring events, allowing China to ratchet up military pressure at will in ways that allow Beijing to signal its displeasure at Taiwan's government while further improving the PLA's capabilities.[135] Such exercises carry high potential to be used as cover for military hostilities against the island.[136]

China Continues Gray Zone Campaign against Taiwan with No Significant Repercussions

In 2024, China continued its gray zone† campaign against Taiwan, expanding its operations and incorporating new methods for

*Of the 153 PLA aircraft, 111 crossed the median line of the Taiwan Strait and proceeded to enter Taiwan's ADIZ. Taiwan's Ministry of National Defense, *PLA Activities in the Waters and Airspace around Taiwan* (中共解放軍臺海周邊海、空域動態), October 15, 2024. Translation.

†A 2019 RAND Corporation study defined the "gray zone" as "an operational space between peace and war, involving coercive actions to change the status quo below a threshold that, in most cases, would prompt a conventional [kinetic] military response, often by blurring the line

increasing pressure on the Lai Administration and Taiwan's populace. China continued its efforts to degrade Taiwan's resolve through near-daily incursions into Taiwan's ADIZ while simultaneously increasing activity via its coast guard, balloons, and unilateral civilian flight route modifications that aim to enforce China's claims of sovereignty over the island and the Taiwan Strait. China's increasingly aggressive activity in the Taiwan Strait via its maritime law enforcement agencies represents an escalation of its decades-long "lawfare" campaign to intimidate Taiwan's populace and give China's actions in the Strait an illusion of legitimacy. China's actions represent what the former Commander of U.S. Indo-Pacific Command Admiral John Aquilino described as a "boiling frog" strategy: gradually increasing threatening activity in the Taiwan Strait so that the ultimate danger will not be appreciated until it is too late.[137]

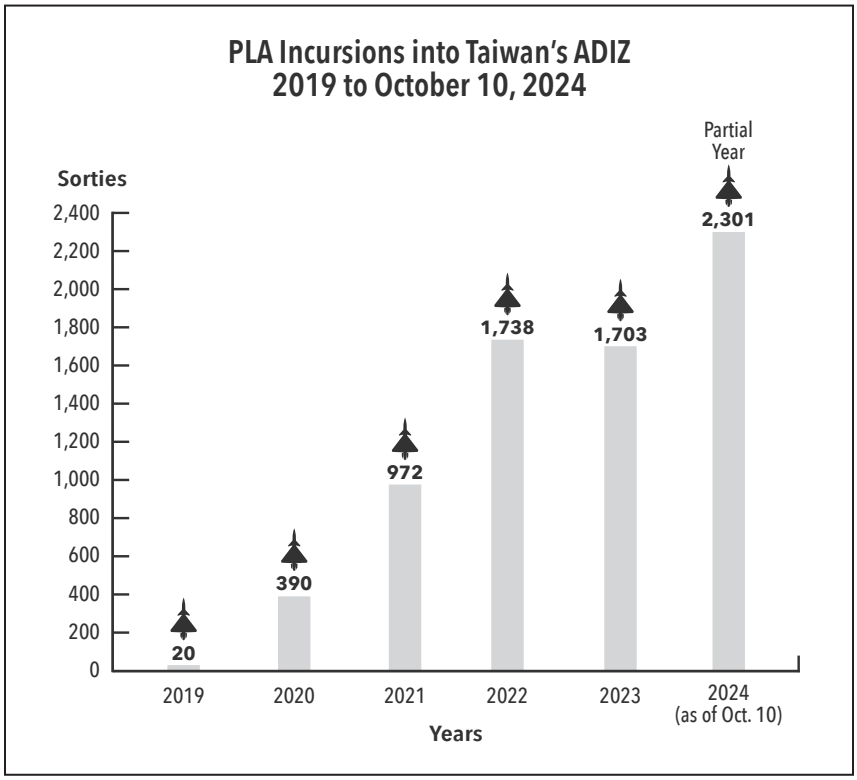
China Continues Intimidation of Taiwan in the Air with Balloons, New Flight Routes

PLA air operations around Taiwan are now a near-daily occurrence, compared to just five years ago, when incursions over the median line and into the ADIZ were rare.[138] After Lai's inauguration, PLA incursions into Taiwan's ADIZ increased significantly over the pace set in 2023. According to a database currently maintained by defense analysts Gerald C. Brown and Ben Lewis that compiles data published by Taiwan's Ministry of National Defense, approximately 2,301 PLA aircraft made sorties into Taiwan's ADIZ between January 1 and October 10, 2024, 64 percent more than the 1,396 sorties that occurred over the same period in 2023.[139] The most intense period occurred in July 2024, with 278 aircraft reported over a two-week period from July 1 to 13, tying a daily record number of 56 aircraft set in 2021.[140]

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between military and non-military actions and the attribution for events." Gray zone tactics can occur through military intimidation, paramilitary activity, the economic activities of state-owned enterprises or private proxies, information operations, diplomacy, and economic coercion. Lyle J. Morris et al., "Gaining Competitive Advantage in the Gray Zone: Response Options for Coercive Aggression below the Threshold of Major War," *RAND Corporation*, 2019, 8, 30–40.

Figure 2: PLA Incursions into Taiwan's ADIZ 2019 to October 10, 2024



Note: Figure compares reported incursions by PLA aircraft into Taiwan's ADIZ between 2019 and 2024. Increased PLA activity surrounding the October Joint Sword 2024B exercise would bring the total number of ADIZ violations to 2,459 for the period of January 1 to October 14, 2024.[141]

Source: Taiwan's Ministry of National Defense, compiled by Gerald C. Brown and Ben Lewis. Gerald C. Brown and Ben Lewis, "Taiwan ADIZ Violations," *PLA Tracker*, last updated October 10, 2024.

Starting in December 2023, China augmented its air operations in Taiwan's ADIZ with balloons launched from the Mainland. On December 7, 2023, a balloon was observed crossing the median line for the first time on the same date that multiple PLA aircraft and ships were observed in the proximity of Taiwan.[142] Throughout December 2023 and January to February 2024, balloon sightings became a near-daily occurrence before tapering off in March and abruptly ending in April.[143] The first overflight of a balloon over Taiwan occurred on January 3, 2024, and escalated to an unprecedented scale in the weeks before and after Taiwan's presidential election.[144] During this period, more than a hundred balloons were tracked flying near Taiwan in total.[145] When questioned about the initial reports of balloons in December 2023, Wu Qian, a spokesman for China's Ministry of National Defense, did not confirm or deny knowledge of any flights while simultaneously reiterating China's claims over Taiwan and accusing the DPP of exaggerating the issue in order to gain votes in the presidential election.[146] Multiple Tai-

wan officials told the press that the balloons were mostly weather balloons collecting atmospheric data but are still part of China's gray zone campaign against Taiwan.[147] The balloons were tracked at unusually low altitudes for meteorological balloons in air corridors used for commercial aviation, which posed risks for midair collisions.[148] Taiwan experts and officials did speculate that the balloons could have other purposes, such as gathering atmospheric data to enable PLA air or missile operations, confusing Taiwan military radar, or signaling to Taiwan's populace that its government cannot defend its airspace.[149]

China's aviation authorities made a major unilateral change to civilian air traffic routes around Taiwan in January, abrogating a 2015 compromise reached with Taiwan's government and furthering their longstanding effort to nullify the median line. Two weeks after Taiwan's election, the Civil Aviation Administration of China (CAAC) made an unanticipated change to the M503 flight route in the Taiwan Strait, canceling a six-nautical-mile "offset" of the flight path, which runs north to south through the Strait.*[150] Planes following the flight path—one mainly used by Chinese airlines but also by some foreign carriers—will now come as close as 4.2 nautical miles to the median line, a demarcation that once acted as an informal barrier between aircraft from the two sides.[151] In addition, the CAAC announced the initiation of eastbound flights on the W122 and W123 paths, which link the M503 flight path to the cities of Fuzhou and Xiamen, respectively, and were previously restricted to only westbound flights.[152] China's Taiwan Affairs Office spokespersons called the changes "routine," stating there was no need to discuss the change with Taiwan and rejecting the existence of the median line.[153] Experts in Taiwan and the United States disagree, however, arguing that the move was an act of "legal warfare" designed to put pressure on the Lai Administration and degrade the existence of the median line.[154]

China's unilateral modification of civilian air traffic routes increases the risk for miscalculation and decreases aviation safety in the Taiwan Strait. Because PLA aircraft now regularly fly east from China to cross the median line, the change in flight routes provides the PLA with increased opportunity to disguise military flights behind a civilian façade, reducing Taiwan's ability to identify, warn, and defend against attack.[155] The introduction of bidirectional air

*China's unilateral flight path adjustments represent a rejection of both its previous agreements with Taiwan and an erosion of the rules-based international order. After Taiwan objected to China establishing the M503, W121, W122, and W123 civilian flight routes in 2015, China agreed to move the M503 route six nautical miles to the west; limit traffic to only southbound non-military flights; and not make changes to routes or implement the W121, W122, and W123 flight routes without consulting Taiwan's Civil Aeronautics Administration (CAA). This agreement was made during the administration of then Taiwan President Ma Ying-jeou, a period of comparatively positive cross-Strait relations. In 2018, China breached the agreement by launching northbound flights in M503 and westbound flights in W121, W122, and W123 without consulting the CAA. Taiwan was excluded from the International Civil Aviation Organization (ICAO) in 2016 after pressure from China and thus had no international forum to voice its concerns. China's unilateral adjustment of the flight routes runs contrary to its commitments under the ICAO. United States Indo-Pacific Command, *Topic: The PRC's Modification of Civilian Flight Routes in the Taiwan Strait*, March 8, 2024; Lin Feng, "Taiwan Snubbed by ICAO, Under Pressure from China," *Voice of America*, September 23, 2016; Taiwan's Mainland Affairs Council, *The Government Has Secured Taiwan's Rights and Interests through Cross-Strait M503 Air Route Consultations and Respected Congressional Oversight*, March 27, 2015; International Civil Aviation Organization, "The First Meeting of South China Sea Major Traffic Flow Review Group (SCS-MTFRG/1)," January 20, 2015.

traffic and higher volumes of aircraft so close to Taiwan's ADIZ and the Taipei Flight Identification Region will also likely strain the Taiwan Civil Aeronautics Administration's capacity to ensure the safety of civilian flight in the Taiwan Strait.[156]

Chinese Maritime Operations Aim to Bolster Legal Claims over Taiwan

In 2024, China intensified its naval presence around Taiwan through increased deployments of military, law enforcement, and ostensibly civilian ships with the likely goals of routinizing its presence and bolstering its legal claims over the island and the Taiwan Strait.* According to data released by Taiwan's Ministry of National Defense, China's naval and coast guard vessels were observed in the vicinity of Taiwan 1,937 times between January 1 and October 10 of 2024, a figure 37 percent higher than the 1,414 vessels observed during the same timeframe in 2023.†[157] The enhanced naval presence around Taiwan is likely meant to demonstrate China's superior maritime capability and to force Taiwan's navy and coast guard to expend finite resources in response.[158] China's increased maritime efforts are not limited to naval vessels. In late 2023, *Zhu Hai Yun*, an advanced Chinese research ship connected to the PLA and capable of operating a dual-use naval drone swarm, circumnavigated Taiwan, likely taking maritime surveys.‡[159] *Zhu Hai Yun* reportedly skirted and briefly entered Taiwan's contiguous zone§ and is one of a number of Chinese research vessels that have done so in the past year.[160]

Beijing has enhanced CCG participation in gray zone activities, providing new capabilities and enhancing its "lawfare" approach to Taiwan Strait issues. Beijing intends to provide a façade of legality for its gray zone activities and to support its claims on the island and the Taiwan Strait.[161] For example, China could seek to regulate global shipping through the Taiwan Strait and frame any military action against Taiwan as an "internal matter."[162] Beijing has used a recent fishing incident to justify a more aggressive coast guard presence in the Taiwan Strait and around Taiwan's outlying islands, launching "law enforcement patrols" to further China's claims that the Taiwan Strait constitutes its internal waters.[163] In February 2024, a China-registered boat sailing in Taiwan's territorial waters

*Chinese officials on multiple occasions have claimed that the Taiwan Strait is not international waters, instead arguing that the Taiwan Strait is China's internal waters, a claim rejected by Taiwan, the United States, and its allies. China's Foreign Ministry spokesman Wang Wenbin stated in June 2023 that "China has sovereignty, sovereign rights and jurisdiction over the Taiwan Strait." China's statements may aim to establish a legal basis on which to attempt to deny U.S. and foreign military vessels access to the Taiwan Strait. Alex Wilson, "China Asserts Jurisdiction over Taiwan Strait, Shuns 'International Waters' Stance by US," *Stars and Stripes*, June 14, 2022; China's Ministry of Foreign Affairs, "Foreign Ministry Spokesperson Wang Wenbin's Regular Press Conference on June 13, 2022," June 13, 2022; Peter Martin, "China Alarms US with Private Warnings to Avoid Taiwan Strait," *Bloomberg*, June 12, 2022.

†Increased PLA activity surrounding the October Joint Sword 2024B exercise would bring the total number of vessels observed around Taiwan to 1,976 for the period of January 1 to October 14, 2024.

‡While the research conducted is ostensibly for civilian purposes, the data (such as seabed characteristics, salinity, currents, and diurnal heating) could also be used to support naval warfare, particularly underwater warfare. Zack Liao, "China's Grey Zone Maritime Operations near Taiwan Intensify," *GeoStrategy*, April 3, 2024.

§Consistent with UN Convention on the Law of the Sea (UNCLOS) regulations, Taiwan defines its territorial sea as beginning 12 nautical miles from its coast and its contiguous zone as beginning 24 nautical miles from its coast. UN Convention on the Law of the Sea, Part II, "Territorial Sea and Contiguous Zone," Section 4, Article 3, 33.

off of Kinmen carrying four Chinese fishermen capsized during a chase after it refused inspection by Taiwan authorities, resulting in the deaths of two of the fishermen.[164] China's Taiwan Affairs Office framed the event as a "vicious incident" and attributed the cause to Taiwan's DPP Administration for treating mainland fishermen in a "rough and dangerous manner."[165] A few days after the incident, the Chinese authorities declared their intention to intensify patrols in the vicinity of Kinmen.[166] On the same day as the declaration—and for the first time—the CCG boarded and conducted a 30-minute search on a Taiwan tourist ship before granting it permission to return to Kinmen.[167] In May 2024, Taiwan officials reported that 11 Chinese vessels intruded into what Taiwan refers to as "restricted and prohibited waters"* around Kinmen island, a record number in one day.[168] Seven Chinese vessels, including Maritime Safety Administration and fisheries enforcement ships, entered Kinmen's restricted waters and were suspected of engaging in a maritime exercise with three Chinese fishing boats.[169] At the same time, another group of four CCG ships entered "restricted and prohibited waters" south of Kinmen, marking the first time CCG and other official Chinese ships have sailed into the waters around Kinmen simultaneously.[170] In mid-May 2024, approximately one week prior to the Joint Sword 2024A exercises, Chinese official media stated that the intensified "Kinmen model" of law enforcement inspections it launched this year "can also be applied to Matsu and Penghu islands, and even the entire Taiwan Strait."[171] Western PLA experts assess that these exercises could be conducted with the intent of imposing a CCG-led "quarantine" of Taiwan, which could force shipping destined for the island to comply with Chinese rules and assert Beijing's claims of sovereignty over Taiwan.[172] Also in May 2024, China passed additional regulations that would authorize the CCG to detain foreign ships that illegally enter "waters under [China's] jurisdiction."†[173] Taiwan Coast Guard Administration Deputy Director-General Hsieh Ching-chin linked the new regulation to the

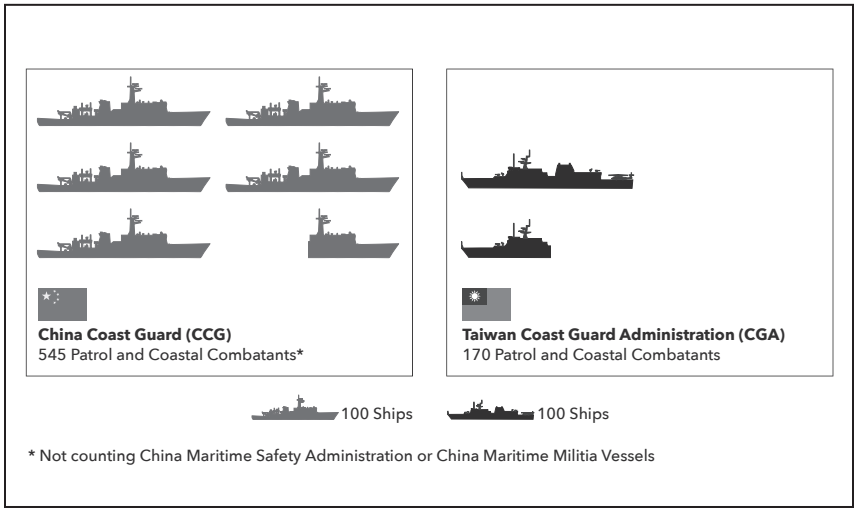
*Taiwan's Ministry of National Defense first designated "restricted and prohibited waters in the area surrounding Kinmen" on October 7, 1992, in accordance with the "Act Governing Relations between the People of the Taiwan Area and the Mainland Area," which stipulates that "mainland Chinese vessels are not allowed to enter Taiwan's restricted and prohibited waters without permission." The prohibited area surrounding Kinmen extends approximately 2.48 miles (4,000 meters) to the east, approximately 4.97 miles (8,000 meters) to the south, and between 0.93 and 1.24 miles (1,500–2,000 meters) off the north and west coasts closer to China. The restricted area extends approximately 1.24 miles (2,000 meters) beyond the prohibited area to the south and east. China does not recognize the restricted and prohibited waters surrounding Kinmen. CNA, "Chinese Coast Guard Spotted near Kinmen after Warning," *Taipei Times*, February 19, 2024; Taiwan's Mainland Affairs Council, "The CCP Persistently Condones Illegal Fishing by the 'Three No's' Vessels. Taiwan will Continue Responding with Strict, Firm, and Consistent Law Enforcement. The MAC Deeply Regrets the Baseless Accusations by the TAO in Disregard of the Efforts by All Parties to Investigate the Cause and Handle the Follow-Up Matters of the Incident" (中共長期縱容「三無」船舶違法濫捕,我方仍將持續嚴正穩健執法,國台辦無端指控,無視各方積極調查肇因與善後處理的努力,陸委會深表遺憾), February 18, 2024. Translation; Taiwan's Mainland Affairs Council, *Map of Kinmen Area Restricted (Prohibited) Waters* (金门地区限制（禁止）水域图), June 7, 2004. Translation.

†In 2021, China passed the China Coast Guard Law, which allows the CCG to engage in law enforcement operations in "maritime areas under Chinese jurisdiction" (without defining those areas) and to conduct forcible eviction of foreign military vessels that "violate" Chinese domestic law. The law stipulates that Chinese authorities may use all means—including force—against foreign organizations or individuals it judges to be infringing on Chinese sovereignty, and it allows them to set up provisional maritime warning areas in which the passage of vessels and people could be restricted or prohibited. Japan Ministry of Defense, *The Coast Guard Law of the People's Republic of China*; China Coast Guard, *Provisions on Administrative Enforcement Procedures of Coast Guard Agencies (2024)* ((2024年)海警机构行政执法程序规定), May 16, 2024. Translation; *China Daily*, "'Kinmen Model' Can Be Expanded to Taiwan Strait," May 14, 2024.

July seizure of a Taiwan-registered fishing boat by the CCG in the waters off the coast of Kinmen.[174] According to Director-General Hsieh, this is the first such incident since 2007.[175] (For more on CCG operations in the Indo-Pacific, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).")

While Taiwan continues to develop and train its coast guard to combat China's gray zone operations, it remains outmatched by the CCG. Taiwan's Coast Guard Administration (CGA) responds regularly to Chinese maritime incursions, as it did during the PLA's Joint Sword 2024A exercise this year when CGA ships warned off CCG ships that had entered restricted waters around the Taiwan-controlled outlying islands of Dongyin in Matsu and Wuqiu in Kinmen.[176] Taiwan has been steadily designing and launching advanced coast guard vessels as part of a shipbuilding project that was initiated in 2018.[177] The project aims to build 141 vessels by 2027, including four 4,000-ton class patrol vessels, six 1,000-ton class patrol vessels, 12 600-ton class patrol vessels, 17 100-ton class patrol boats, 52 35-ton class patrol boats, and 50 littoral utility boats.[178] Despite this investment, Taiwan's coast guard forces are outmatched by the CCG in terms of both numbers and tonnage.[179] Taiwan also cannot match the CCG's ability to draw resources from China's other maritime forces, such as the Maritime Security Agency, which has at least three dozen oceangoing vessels as well as hundreds of smaller patrol craft, or the thousands of fishing vessels associated with China's maritime militia.[180]

Figure 3: Comparison of China and Taiwan's Coast Guard Fleet



Note: Chart depicting the number of ships in both the CCG and Taiwan's CGA in units of 100.
Source: International Institute for Strategic Studies, "Military Balance: Asia," 124:1 (2024): 263, 317.

To date, China has not faced significant repercussions for its expanding gray zone activities against Taiwan. Taiwan's military and coast guard regularly intercept Chinese aircraft and vessels violating its ADIZ and waters but have not taken more aggressive action to date.[181] The U.S. Department of State responded to the CCG's

seizure of a Taiwan fishing vessel by stating it was closely monitoring the incident and called for resolution via open communication between both sides, but it did not unveil any punitive actions.[182]

Lai Administration Continues Defense Reforms, Pursuing Asymmetric Capabilities and Better-Trained Personnel

The Lai Administration has made it clear that it intends to continue the military strategy embraced by the previous Tsai Administration. High-level personnel shuffling has retained veterans of the previous administration, indicating commitment to the ongoing reforms of Taiwan's military. Taiwan continues to modernize its military human capital, improving training, launching quality-of-life reforms, and taking the first steps toward a new military culture better suited to modern warfighting conditions. In public statements, defense officials have committed to adopting equipment applicable to an asymmetric strategy, but Taiwan's armed forces continue to desire conventional platforms useful for responding to the pressure created by China's daily gray zone operations.[183] The United States continues to support Taiwan's defense through increasing focus on resources in the Indo-Pacific and via arms sales to Taiwan, but issues remain in the delivery of long-awaited systems.

Taiwan's National Security Apparatus Maintains Course, Enhances Resilience Efforts

Taiwan's new cabinet signals a continuity of policy under Lai by retaining veteran security officials. Tsai Ming-yen remains as director-general of Taiwan's principal intelligence agency, the National Security Bureau, a position typically held by former military officers and one Tsai has held since January 2023.[184] Joseph Wu, former foreign minister, heads Taiwan's National Security Council, a position he previously held under Tsai from 2016 to 2017.[185] Secretary-General of Taiwan's National Security Council Wellington Koo serves as defense minister—the first not drawn from the ranks of retired generals since 2013.[186] Koo's appointment is likely intended to create a greater push for the Lai Administration's desired reforms and changes to the political culture of the armed forces.[187]

Taiwan is also seeking to enhance the resilience of its society and institutions to better prepare for various contingencies. In June 2024, Lai announced the creation of the Whole-of-Society Defense Resilience Committee under the Presidential Office and announced he would serve as its head.*[188] Lai's establishment of that committee signals a fresh commitment to improving Taiwan's civil resilience. According to Lai, the committee will enhance emergency preparedness and disaster resilience by focusing on expanding civilian training, ensuring adequate supplies and shelters, and reinforcing energy and critical infrastructure security.[189] Lai emphasized the importance of the public's commitment to resiliency initiatives, noting that "only when our entire society possesses a strong will for self-defense and an unwavering confidence in ourselves can Taiwan effectively respond to various disasters and risks."[190]

*Vice President Hsiao Bi-khim, National Security Council Secretary-General Joseph Wu, and Secretary-General to the President Pan Men-an will serve as deputy conveners. Office of the President, Republic of China (Taiwan), *President Lai Holds Press Conference to Mark First Month in Office*, June 19, 2024.

Societal resilience is key as Taiwan faces threats of blockade or invasion from China. Taiwan's handling of disinformation enhances its societal resilience while government and civil society organizations continue to bolster its civil defense capabilities.[191] In September 2024, the U.S. nonprofit Spirit of America and Taiwan's Forward Alliance held a joint emergency preparedness exercise in Taipei with over 300 participants taking part in the exercise, which was attended by Vice President Hsiao Bi-khim.[192] China-origin disinformation efforts have been pushing various narratives designed to degrade the Taiwan public's will to resist should a conflict break out.[193] Scott W. Harold, senior political scientist at the RAND Corporation, assesses these include narratives designed to induce doubts about Taiwan's leadership, present Taiwan's armed forces as incapable of defending the island, and spread fears that the United States would abandon Taiwan in a contingency.[194] Experts assess that perceptions of the likelihood of U.S. military intervention in the event of conflict are a key factor in the Taiwan public's willingness to resist a Chinese attack and a major focus of Chinese state-sponsored disinformation efforts.*[195] Polls conducted by Taiwan's National Chengchi University examining Taiwan's confidence in U.S. involvement in a conflict have shifted based on U.S. actions. For instance, public confidence temporarily declined after observations that the United States was only sending weapons to Ukraine, rather than troops.[196] Later in 2022, academic researchers in Taiwan found that visits by high-level U.S. officials to the island had boosted confidence in the U.S. commitment to Taiwan.[197] A 2024 poll found that about 54 percent of people in Taiwan believed the United States would come to Taiwan's aid regardless of who the U.S. president is, even as only around 24 percent of respondents in Taiwan viewed the United States as "trustworthy" or "very trustworthy."[198] Other 2024 polls conducted in Taiwan found that respondents who were not confident in U.S. military involvement in a Taiwan conflict correspondingly had low confidence in Taiwan's military capabilities and lower willingness to fight.[199] More broadly, polling conducted by Taiwan's Institute for National Defense and Security Research (INDSR) from September 2021 to August 2023 found that support among Taiwan's populace to fight to defend Taiwan averaged between 65 percent and 75 percent during those two years.[200] The most recent INDSR survey, published in October 2024, is consistent with earlier results, finding that about 68 percent of respondents would be willing to fight to defend Taiwan and approximately 53 percent believed the United States would send troops to Taiwan to aid in its defense.†[201]

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*A survey conducted by the Election Study Center at National Chengchi University in 2024 found that 59.6 percent of respondents believe the United States will use force to defend Taiwan if China attacks, with 31.7 percent believing it will not; 58.2 percent of respondents answered that U.S. support for Taiwan's security had increased in recent years. National Chengchi University, "2024 Survey Results of the 'American Portrait' Press Release," July 18, 2024.

†According to Li Guangcheng, assistant research at the National Defense Academy, the poll results also indicated that if China invades Taiwan with force, most of the Taiwan public believes the United States would help Taiwan in indirect ways such as "airlifting food or medical supplies to Taiwan," "impos[ing] economic and diplomatic sanctions on China," and "provid[ing] weapons and military supplies to Taiwan." However, there are reservations regarding the possibility of direct military intervention by the United States should conflict occur. Lai Yuzhen, "Institute for National Defense and Security Research Survey: More than Half of the Public Thinks That U.S. Troops Would Come to Help if China Militarily Invades Taiwan" (國防院民調:中國若武力犯台 逾半民眾認為美軍將馳援), *Central News Agency*, October 9, 2024. Translation.

Taiwan Continues Military Reforms to Manpower and Training

Taiwan has taken steps to reform its armed forces, addressing a variety of issues related to training and recruitment, but it remains difficult for outside observers to assess its progress. Shortly after becoming defense minister, Koo emphasized the importance of developing better combat resilience, mobilizing civilian defense, strengthening reserve forces, promoting defense autonomy, and prioritizing the wellbeing of soldiers.[202] Defense Minister Koo has ordered updates to military regulations to improve the quality of life of Taiwan troops and remove training judged to have little practical use in modern warfare, such as bayonet drills and ceremonial goose-stepping.[203] Before being cut short after three days due to troops being mobilized to support disaster-relief efforts following Typhoon Gaemi, the field portion of Taiwan's annual Han Kuang exercise was to be unrehearsed and less scripted than in previous years and to feature Taiwan forces operating at night and independently of orders from central command.*[204] Exercises were also to be staged involving military-civilian cooperation, including testing the ability to conduct wartime supply delivery missions to maintain links to the outside world in the event of a blockade.[205] Such reforms are intended to address criticisms that Taiwan's military training lacks realism and rigor, with Koo stating that Taiwan's Ministry of National Defense would cancel live-fire exercises that are "put up for a show or demonstration purposes only."[206] An October 2023 report by the Legislative Yuan's Budget Center showed Taiwan has 155,218 active volunteer soldiers, the lowest number in its military in the past five years, and some army units are manned at as low as 80 percent of their authorized strength.[207] Combined with Taiwan's longstanding recruitment problems for its volunteer force, this situation heightens the need for Taiwan's active conscripts and reservists to become better trained and more capable.[208]

Taiwan Continues Reforms to Conscription System

Taiwan has prioritized reforms to its conscription system, but challenges remain in implementation. In January 2024, Taiwan's government followed through with its Strengthening All-People's Defense Military Force Restructuring Plan, announced by then President Tsai in 2022 to initiate a new program that would extend conscripted military service for males from four months to one year.[209] This program reverses a decline in mandatory conscription periods that successive Taiwan administrations had pursued since the early 2000s; the Chen Shui-bian Administration reduced the mandatory length of service from two years to one year in 2008, while the Ma Ying-jeou Administration in 2013 reduced the mandatory length of conscription from one year to fourth months.[210]

Taiwan's Ministry of National Defense has improved basic training for conscript troops, basing the eight-week course on the training received by active-duty soldiers.[211] Announced reforms in 2023 involve

*Taiwan's military did exercise portions of the planned exercises during the first three days, including naval and air disbursal drills, naval mine-laying drills, mobilization of reservists, and a "nighttime counter-infiltration drill." John Dotson, "The 2024 Han Kuang Exercise—a Small Step towards More Decentralized Operations for Taiwan's Military?" *Global Taiwan Institute*, August 7, 2024.

more civil defense training, including medical training, air defense evacuation, and emergency rescue training intended to enhance the resiliency of Taiwan's populace by increasing the number of civilian former conscripts trained in civil defense skills.[212] The new training will include greater weapons familiarization for the individual conscript; training with advanced weapons; and nuclear, biological, and chemical (NBC) training.[213] Most of the new conscript recruits will be directed to service in the army's new "garrison troops" classification—the forces charged with performing territorial defense and rear-echelon service as defined by the government's 2022 plan.[214] The new program represents a significant social change and could provide additional manpower to the understrength Republic of China (ROC) armed forces by freeing up active-duty volunteers to focus on combat operations.[215] Issues with implementation of these reforms remain, however; due to lack of equipment, some one-year conscripts did not train on the use of drones or advanced weapons this year as originally planned.[216] Questions also remain about how the Taiwan Ministry of National Defense will manage the new conscripts once their year of active service concludes and they are enrolled in Taiwan's reservist program.[217]

Taiwan Seeks to Expand Reserve System

Taiwan's reforms to its reservist systems also aim to alleviate its military manpower shortages. As part of the 2022 plan, Taiwan's Ministry of National Defense was to improve the training and readiness of Taiwan's reservists.[218] Defense Minister Koo has highlighted reforms to Taiwan's reserves as a priority.[219] There are some indications of improvements. Taiwan has launched a limited expansion of firearms refresher programs for reservists and has opened the reserves to female veterans.[220] However, Taiwan faces a significant challenge in reforming its reserves into an effective force. In 2022, Major General Yu Wen-cheng of Taiwan's All-Out Defense Mobilization Agency stated that training capacity limitations mean Taiwan can only host training for approximately 110,000 reservists per year, a number far smaller than the 300,000 reservists required to undergo annual training.[221] Taiwan reservists are officially required to undergo a refresher training course every two years, but in practice, many attend far less frequently.[222] Taiwan launched an extended two-week refresher training course for reservists in 2022, but reportedly only one-fifth of eligible reservists were able to participate in that program as of 2023.[223] Furthermore, Taiwan's army reportedly does not have enough weapons and equipment to supply all of its reserve troops should they be mobilized.[224]

Taiwan Continues Development and Procurement of Indigenous Asymmetric Systems

Taiwan continues to develop indigenous advanced military equipment applicable to an asymmetric warfighting strategy. While Taiwan has made progress on reforms, its military is pulled between the competing priorities of reform and modernization, adopting asymmetric equipment, and maintaining conventional capabilities to respond to China's gray zone operations. In a report to the Legislative Yuan, Defense Minister Koo emphasized the importance of

adopting an asymmetric strategy focused on "precision, mobility, lethality, dispersion, survivability, and cost-effectiveness."*[225] He has indicated that Taiwan is developing new battlefield air defense systems, high-performance naval ships, prototype submarines, various drone types, and precision munitions such as the Hsiung Feng IIE land-attack cruise missiles and Wan Chien air-to-ground cruise missiles.†[226] Specific examples of capabilities that would further an asymmetric warfighting strategy include:

- *Corvettes:* In March 2024, Taiwan's navy commissioned four Tuo Chiang-class corvettes equipped with anti-ship and anti-air missiles as well as stealth capabilities.[227] Taiwan currently has six of the corvettes and hopes to have 11 by 2026.[228]
- *Drones:* Taiwan is in the process of acquiring an initial 3,225 micro and small military drones from local suppliers by 2025, making progress toward the goals of sourcing from domestic suppliers a fleet of 7,000 commercial and 700 military drones by 2028, as laid out in Taiwan's *2023 National Defense Report*.[229] However, Taiwan's indigenous drone program faces problems in some areas; for example, its Teng Yun drone, first unveiled in 2015, is still undergoing testing.[230]
- *Anti-drone system:* Taiwan also recently integrated a new electronic warfare anti-drone weapon into its armed forces in late February 2024, part of a $146 million program aimed at strengthening defense capabilities across Taiwan's military bases and countering Chinese drone intrusions over its outlying islands.[231]
- *A new military innovation unit:* Defense Minister Koo also announced the creation of a new military technology development unit modeled after the U.S. Defense Innovation Unit.‡[232] The new unit, which will report directly to Koo, will work to combine the resources and capabilities of the Ministry of National Defense's top research unit, the National Chung-Shan Institute of Science and Technology (NCSIST), with those of other civilian-run defense technology companies.[233] Instead of attempting to develop defense technology from scratch, the new unit will instead focus on investing in proven defense technologies such as next-generation drones and unmanned ships.[234] NCSIST has

*In August, Taiwan's Ministry of National Defense announced it would be retiring over 1,000 aging vehicles and weapons systems between 2024 and 2028, including M41D tanks, CM24 armored vehicles, and F-5 jets, some of which had been in service for over 50 years. The Ministry of National Defense claimed that the decommissioning of the systems will result in savings of $98.6 million. *Focus Taiwan*, "Taiwan Military to Retire M41D Tanks, CM24 Armored Vehicles, F-5s in 5 Years," August 13, 2024.

†Taiwan has also ordered equipment to enhance infantry capability with improved ballistic vests scheduled for delivery in 2025, built to U.S. military standards and reportedly able to withstand hits from standard-issue PLA bullets. Taiwan has also ordered 80,000 new T112 assault rifles for use by Taiwan's army, reserves, and military police that are set for delivery from 2025 to 2028. The newly developed rifles feature a standard optical sight and increased range and barrel life. *Taiwan News*, "Taiwan Army to receive over 80,000 T112 rifles in 2025," September 19, 2024; *Military News Agency*, "Minister Gu Thanked Friends in the Media For Emphasizing The Continued Improvement Of National Defense Capabilities And Resilience" (顧部長感謝媒體諍友　強調持續提升國防戰力與韌性), September 19, 2024. Translation; Joe Saballa, "Taiwan Army to Buy 25,000 Upgraded Assault Rifles: Reports," *Defense Post*, April 9, 2024.

‡The Defense Innovation Unit is an organization within the U.S. Department of Defense that was established to expedite the U.S. military's adoption of emerging commercial technologies through partnerships with private technology companies. Defense Innovation Unit, *About*.

reportedly launched a two-year "unmanned attack vessel" development program, with the goal of starting production of at least 200 unmanned ships by 2026.[235]

Taiwan's defense spending as a share of its gross domestic product (GDP) has remained steady even as it continues to increase the nominal total. In August 2024, the Lai Administration proposed a 2025 defense budget 7.7 percent larger than the previous year, at $20.2 billion, a record high.[236] Although an increase in gross spending, this proposed budget would amount to 2.45 percent of Taiwan's GDP, a slight decrease from the previous two years' budgets that had rates closer to 2.5 percent of GDP.[237] Hsieh Chi-hsien, head of the Ministry of National Defense's Comptroller Bureau, notes that increasing the budget to 3 percent of GDP remains a goal, but does not give a timeline.[238] The proposal includes funding for the manufacture of seven additional indigenous submarines and a special fund for local development and production of missiles.[239]

Taiwan Learns Lessons from Russia's War in Ukraine

Taiwan continues to observe the Ukraine conflict for lessons that may apply in the case of Chinese military action. The conflict in Ukraine gave Taiwan greater impetus to reform its reservist system, enhance reservist training, and better incorporate reservists into defense plans.[240] In the summer of 2022, following Russia's invasion of Ukraine, reservists were featured in Taiwan's annual Han Kuang exercise and have been involved in subsequent annual exercises.[241] Taiwan's *2023 National Defense Report* notes that the war in Ukraine underscores the importance of energy security and Taiwan's vulnerability to disruptions of the international food market, energy imports, and supply chains for military materiel.[242] The report specifically cites the conflict in Ukraine as the reason for the Taiwan government's renewed emphasis on civil-military coordination and the publication of *All-Out Defense Handbooks* in 2022 and 2023.[243] The expansion of Taiwan's annual Wan An air raid drill and enhanced efforts to build its drone fleet have also reportedly occurred in response to lessons learned from Ukraine.[244]

Taiwan has begun a program to launch its own communications satellites to ensure connection to the outside world in the event of Chinese military action, inspired by the role that SpaceX's Starlink constellation has played in Ukraine's defense.[245] Similar to Starlink, Taiwan's system would provide internet access through low Earth orbit (LEO) satellites, allowing individuals to tap into the data link emitted from overhead satellites for a variety of purposes, including civilian communication as well as military command and control.[246] In 2023, then President Tsai pledged an additional $1.3 billion to Taiwan's space program, which aims to begin launching its first dedicated communication satellite by 2026.[247] Taiwan's Ministry of Digital Affairs announced in July 2024 that LEO and medium earth orbit satellite signals now cover all of Taiwan and its outlying islands.[248] The ministry also tested LEO satellites' connectivity to over 700 ground terminals enabling military and government users to maintain communication capabilities during emergencies for a period of 12 hours each day via commercial satellites.[249]

The United States Continues to Provide Support for Taiwan's Defense

The United States continues to support Taiwan's defense through arms sales (see Appendix II) and foreign military financing pathways. Regarding priority acquisitions from the United States, Defense Minister Koo outlined plans to Taiwan's legislature to procure Patriot III Extended Range air defense missiles, Harpoon precision strike systems, Exocet missile coastal defense systems, F-16V fighters, and other long-range precision weapons for air, land, and maritime targets.[250] A slate of man-portable anti-air and anti-armor munitions ordered in 2015 is expected to be delivered to Taiwan by the end of this calendar year.[251] In a significant boost to Taiwan's asymmetric systems inventory, the U.S. Department of State announced in June 2024 that it had approved the sale of over 1,000 loitering munitions for sale to Taiwan to be delivered by the end of 2025.[252] However, Taiwan also remains committed to building expensive, conventional systems, such as the Yushan-class landing platform docks, commissioning the first such vessel in 2022 with a total of four planned.[253] Taiwan's anticipated delivery of F-16V fighters and Abrams tanks are also of questionable applicability toward an asymmetric strategy and make up over half of the current backlog of arms sales to Taiwan.[254]

Despite U.S. support, significant challenges remain with the backlog of arms that have been ordered but not yet delivered. The backlog of U.S. arms sales to Taiwan is currently estimated at over $19 billion in gross value.[255] According to analysis conducted by the CATO Institute, 55 percent ($10.87 billion) of the backlog's value is for capabilities considered "traditional" (e.g., F-16V, M1A2T Abrams tanks) rather than those supporting an "asymmetric" strategy (e.g., Harpoon coastal defense system, HIMARS,* and munitions).[256] For example, two U.S.-made MQ-9B SkyGuardian drones, originally ordered in 2020, are not set for delivery until 2026, with another pair slated for 2027.[257] The MQ-9Bs are a platform that could also assist Taiwan in countering China's gray zone campaign by monitoring Chinese naval assets. In addition to delays resulting from limitations in the U.S. defense industrial base, a House Foreign Affairs Committee Foreign Military Sales TIGER Task Force report published in February 2024 assesses several causes for Foreign Military Sales (FMS) delays attributed to the U.S. government's FMS processes.[258] The task force finds that more arms sales cases are subject to congressional review because that threshold has not scaled with increases in costs of advanced systems over time, causing far more cases to be subject to congressional review than originally intended.†[259] The task force also attributes delays in the process to a

*U.S.-supplied High Mobility Artillery Rocket System (HIMARS) medium-range mobile rocket artillery systems have proven to be highly effective when employed by the Ukrainian military in its conflict with Russia. Lyle Goldstein and Nathan Waechter, "China Considers CounterMeasures to US HIMARS Missile System," *Diplomat*, June 22, 2023.

†Congress is to be notified for major defense equipment sales of $14 million or more, any defense articles and services of $50 million or more, and design and construction services of $200 million or more, with a 30-day review period. This threshold was last set in 2003 and has not been adjusted for inflation since. While this process is typically resolved quickly, the task force found that it has been the cause of significant delays in a small number of cases. House Foreign Affairs Committee, *Foreign Military Sales Foreign Military Sales TIGER Task Force: Report*, February 7, 2024, 8.

lack of a sense of urgency among relevant agencies, as well as the time it takes to reconfigure weapons systems to comply with U.S. export policy.*[260]

The task force and Administration officials find that another critical factor contributing to weapons delays are systemic issues within the U.S. defense industry itself.[261] Consolidation across the defense industry has left fewer suppliers and production lines to meet growing demand for U.S. weapons abroad, a challenge that has been exacerbated by complex production processes and long supply chains that are vulnerable to disruption.[262] Inconsistent demand signals from the U.S. government due to yearly budget uncertainty and continuing resolutions have led defense manufacturers to purposely refrain from investing in greater manufacturing capacity lest an anticipated demand fail to materialize.[263] In an attempt to address these delays and long delivery timelines, Taiwan has increased production of indigenous systems and is exploring munitions co-production.[264] (For more information on the U.S. defense industrial base, see Chapter 8, "China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies.") Taiwan is in the early stages of partnering with U.S. defense contractor Northrop Grumman to produce 30 mm munitions on-island under license.[265]

Prominent leaders in Taiwan have called for closer cooperation with the United States to help Taiwan produce and procure the weapons necessary for effective deterrence and defense. In May 2024, Taiwan's then Vice President-elect, Hsiao Bi-khim, suggested that Taiwan and the United States enter into a Security of Supply Arrangement, an idea that was also endorsed by Taiwan's minister of foreign affairs at the time, Joseph Wu.[266] Security of Supply Arrangements aim to "ensure the mutual supply of defense goods and services" by encouraging partner nations "to acquire defense goods from each other, promote interoperability, and provide assurance of timely delivery during peacetime, emergency, and armed conflict."[267] The United States currently maintains Security of Supply Arrangements with 18 countries, including Indo-Pacific countries such as India, Japan, Korea, Australia, and Singapore.†[268]

In 2024, U.S. lawmakers continued to seek new pathways to provide for the defense of Taiwan while reducing the backlog of arms sales to Taiwan's military. The Further Consolidated Appropriations Act 2024 makes available no less than $300 million in foreign military financing (FMF) for Taiwan.[269] Separate emergency supplemental appropriations for fiscal year (FY) 2024 include $8.12 billion to strengthen U.S. military capabilities and infrastructure in the Indo-Pacific and assist Taiwan and other regional partners in deterring China.[270] This includes $1.9 billion specifically for replacing

*The task force also found that the lack of a "common operating picture" for the FMS process across DOD, the State Department, defense industry, and U.S. allies and partners has led to confusion and inefficiency in FMS cases globally. House Foreign Affairs Committee, *Foreign Military Sales Foreign Military Sales TIGER Task Force: Report*, February 7, 2024, 3.

†The 18 countries with which the United States maintains Security of Supply Arrangements are as follows: Australia, Canada, Denmark, Estonia, Finland, India, Israel, Italy, Japan, Latvia, Lithuania, the Netherlands, Norway, the Republic of Korea, Singapore, Spain, Sweden, and the United Kingdom. Canada is included in the list of countries with which the United States maintains Security of Supply Arrangements because DOD has a Memorandum of Understanding with Canada to "mutually provide priorities support." Assistant U.S. Secretary of Defense for Industrial Base Policy, *Security of Supply*; U.S. Department of Defense, *DOD, India Ministry of Defence Enter into Security of Supply Arrangement*, August 22, 2024.

stocks of U.S. defense articles and for services provided to Taiwan and $2 billion in FMF for the Indo-Pacific region as a whole, of which Taiwan could be a recipient.[271] This emergency supplemental could enable the Biden Administration to authorize further Presidential Drawdown Authority (PDA) transfers to Taiwan now that the U.S. military has funding to backfill any transferred equipment.[272] PDA use by the Administration is unlikely to significantly reduce Taiwan's arms sale backlog, however, as it is not applicable to the biggest-ticket items on backlog.[273] PDA only enables the Administration to send defense articles that are already in the U.S. military's inventory.[274] Taiwan's F-16V aircraft, which make up approximately 40 percent of the backlog, are not applicable to PDA, as that variant is not in U.S. military inventory and is still being manufactured for Taiwan.[275]

Taiwan Advances Unofficial Ties while Beijing Works to Build Support for Its Territorial Claim

Taiwan began the year with a critical election that had global ramifications. Immediately after Lai's election, Beijing intensified its international campaign designed to further diplomatically isolate Taiwan. In response to international support for Taiwan, China has become increasingly vocal in its protestations and heavy-handed in its approach. Beijing's strategy has evolved, with Chinese officials now more blatant in their deliberate misrepresentation of international law and diplomatic agreements that serve their claim that Taiwan is an inalienable part of China.

Beijing's International Diplomacy Seeks to Isolate Taiwan, Build Support for "Reunification"

Taiwan continues to lose diplomatic allies as a result of Chinese pressure to switch diplomatic recognition. Immediately after the results of Taiwan's presidential election were announced in January 2024, the country of Nauru switched diplomatic recognition from the ROC to the People's Republic of China (PRC) in a move that was likely purposefully timed to be announced after the election.[276] Taiwan's Central News Agency (CNA) claimed the switch was connected to a funding shortfall related to the Australian immigration detention facility Nauru hosts.[277] Prior to the switch, CNA claims Nauru had asked Taiwan for $83.23 million to keep the facility open.[278] (For more on China's engagement with Pacific Islands, see Chapter 2, "U.S.-China Security and Foreign Affairs (Year in Review).") Taiwan is now left with 12 diplomatic partners in a continuation of a trend that Beijing accelerated in 2016 after the election of Tsai, when Taiwan had formal relations with 22 countries.*[279]

Beijing has been campaigning internationally to conflate various countries' "One China policy" with its own "One China principle," accusing U.S. officials of violating the "One China principle" despite the United States never endorsing Beijing's viewpoint.†[280] (For a

*The remaining states that officially recognize Taiwan are: the Marshall Islands, the Republic of Palau, Tuvalu, Eswatini, the Holy See, Belize, the Republic of Guatemala, Haiti, the Republic of Paraguay, St. Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines. Taiwan Ministry of Foreign Affairs, *Diplomatic Allies*.

†China's "One China principle" refers to the Chinese government's position that Taiwan is an inalienable part of the state called "China" ruled by the PRC. Countries that maintain official

discussion of the differences between Beijing's "One China principle" and the U.S. "One China policy," see Appendix I.) For example, the Chinese consulate in Los Angeles directly misrepresented the United States' position in a May 2024 statement, falsely writing that the United States "recognizes" China's position that there is only one China and Taiwan is part of China.*[281] That same statement falsely claimed that every nation that established diplomatic relations with Beijing has endorsed its "One China principle" and that the principle is universally recognized.[282] Chinese government officials routinely accuse the United States of violating the "One China principle" for actions such as defense sales to Taiwan despite the United States never agreeing to the principle.[283] In a similar example, China misleadingly portrayed Ireland as in agreement with its "One China principle" during a recent meeting between leaders. According to the Chinese readout of a January 2024 meeting between Irish Prime Minister Leo Varadkar and Chinese Premier Li, Varadkar stated that Ireland abides by the "One China principle" and that he "hopes that China will achieve peaceful reunification at an early date."[284] Varadkar later corrected the record however, stating that at the meeting he had instead reaffirmed Ireland's One China "policy."[285]

In an important departure from the past, in 2024 Beijing also began to actively cultivate support from other countries for Taiwan's "reunification" with the Mainland. (For more on Beijing's use of "reunification," see Appendix I.) No longer satisfied with states just voicing support for the "One China principle," China has apparently begun persuading countries to make statements endorsing China's "national reunification."[286] This strategy has been evident in several statements between Chinese officials and foreign leaders, particularly in countries looking to China for economic development.[287] In a statement during Chinese Premier Li's visit to Malaysia on June 20, for example, Prime Minister Anwar Ibrahim said that his country firmly supports China in "achieving national reunification."[288] King Hamad bin Isa Al Khalifa of Bahrain has said he supports "peaceful reunification," while leaders from Equatorial Guinea, Egypt, Pakistan, and Suriname have said they support "reunification" or "complete reunification" without reference to peaceful conditions.[289] After separate meetings between Xi and their respective heads of state this year, the Solomon Islands, Vanuatu, and the Federated States of Micronesia all expressed support for China's "national reunification," while Fiji reaffirmed "its adherence to the one-China principle."[290]

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ties with Beijing and unofficial ties with Taiwan often use the phrase "One China policy" to describe their own stance of officially recognizing the PRC while simultaneously recognizing that the interpretation of "One China" is up for debate. The United States maintains its own "One China policy" that similarly recognizes the PRC as the sole legal government of China, but it does not endorse—it only acknowledges—Beijing's position that Taiwan is a part of China, with the expectation that cross-Strait differences would be resolved peacefully. (For a fuller discussion of Beijing's "One China policy," see Appendix I.) Amrita Jash, "The 'One China Principle': China's 'Norm' versus Global Realities, *Global Taiwan Institute*, February 21, 2024; *Economist,* "A New Diplomatic Struggle Is Unfolding over Taiwan," January 25, 2024; Steven M. Goldstein, "Understanding the One China Policy," *Brookings Institution*, August 31, 2023.

*In May 2024, the Chinese consulate in Los Angeles claimed that "UNGA Resolution 2758 fully reflects and solemnly reaffirms the one-China principle" and that the resolution "made clear" that "Taiwan is a part of China, not a country," despite the complete absence of any judgment on sovereignty over Taiwan in the resolution. Consulate-General of the People's Republic of China in Los Angeles, *UNGA Resolution 2758 Brooks No Challenge, and the One-China Principle Is Unshakable*, May 17, 2024; Jessica Drun and Bonnie Glaser, "The Distortion of UN Resolution 2758 and Limits on Taiwan's Access to the United Nations," *German Marshall Fund*, March 24, 2022.

Beijing's Efforts to Distort UNGA Resolution 2758

Beijing has consistently misrepresented the meaning of UN General Assembly (UNGA) Resolution 2758, asserting the resolution provides a basis in international law for its claim that Taiwan is a part of China. The UNGA passed Resolution 2758 on October 25, 1971, recognizing the representatives of the government of the PRC as the "only legitimate representatives of China to the United Nations" while simultaneously "expel[ling] … the representatives of Chiang Kai-shek" (i.e., representatives from Taipei's government) from China's seat at the UN.[291] Because member states were unable to reach a conclusion regarding the legal status of Taiwan, Resolution 2758 solely addressed the question of China's representation in the UN and did not address the question of Taiwan's sovereignty.[292] Nonetheless, Beijing has increasingly asserted that Resolution 2758 endorses China's sovereignty over Taiwan.[293] According to a spokesperson for China's permanent mission to the UN in 2020, "Resolution 2758 of the UN General Assembly has restored the lawful seat of the People's Republic of China at the UN and affirmed the one-China principle at the Organization, which has been strictly observed across the UN system and widely respected by UN Member States."[294] Beijing has used its influence to require official UN references to Taiwan to be written as "Taiwan, Province of China" or refer to Taiwan as an "integral part" of China.[295] Beijing also invokes Resolution 2758 to justify denying Taiwan's international participation in the UN or any other international organization whose membership is confined to sovereign states.[296] Beijing pressures countries with which it maintains an official relationship to endorse its interpretation of UNGA Resolution 2758. When the government of Nauru officially switched its recognition to the PRC in January 2024, its statement specifically invoked Resolution 2758.[297] If Beijing is successful in propagating its interpretation of Resolution 2758 as analogous to its "One China principle," it may be able to more convincingly justify the use of force or coercion against Taiwan as lawful.[298]

Beijing Attempts to Deter Engagement with Taiwan

International messages of congratulations to Lai after the presidential election were met with outcry from Beijing. When President Ferdinand Marcos of the Philippines congratulated Lai on his victory in the 2024 presidential election, China's ambassador to the Philippines protested, stating that Marcos' remarks "constitute a serious violation of the One China principle and… a serious breach of the political commitments made by the Philippines to the Chinese side" and suggesting that Marcos ought to "read more books to properly understand the ins and outs of the Taiwan issue, so as to draw the right conclusions."[299] Similarly, when Singapore's foreign ministry welcomed and congratulated the election, China's Ministry of Foreign Affairs swiftly delivered démarches to Singapore.[300] The Chinese Embassy in Japan also lodged a protest with Japan's government after the Japanese Foreign Minister sent a congratulatory message to Lai.[301]

In response to international support for Taiwan, China engaged in more blatant attempts to dissuade foreign officials from interacting with it. For example, China waged an aggressive influence campaign to deter participation in this year's Inter-Parliamentary Alliance on China (IPAC)* summit held in Taiwan. In the days leading up to the July 2024 meeting, reports emerged of some delegates being contacted by Chinese diplomats in what they said was a "clear attempt to intimidate and dissuade" them from attending.[302] The *Guardian* reported that Luke de Pulford, executive director of IPAC, said some members had received calls or demands for meetings scheduled at the same time as the summit to "express to them why they shouldn't wade into the Taiwan question," or they were offered trips to China "as if they could be bought off."[303] At the summit, Taiwan formally joined IPAC, with representatives from the DPP and TPP selected to serve as co-chairs leading Taiwan's delegation to the alliance.†[304] IPAC members also launched the 2758 Initiative, pledging to pass resolutions in their respective legislatures to reject Beijing's distortion of UNGA 2758 as international law.[305] In March 2024, the U.S. Department of Justice unsealed an indictment revealing that in or about 2021, Chinese hackers associated with the Ministry of State Security targeted 124 politicians that are members of the alliance.[306]

Taiwan Deepens Engagement with Unofficial Partners in Asia and Europe

Taiwan continued its efforts to find ways to deepen cooperation with other like-minded democracies. European nations and political parties appeared to be increasingly receptive to Taiwan's outreach and deepening economic relationships through trade agreements and investments in the continent. In Asia, more countries enhanced their relationships with Taiwan, much to Beijing's ire.

Europe Increasingly Receptive to Taipei's Outreach

Taiwan under DPP administrations has sought to strengthen ties with European countries by appealing to shared values of democracy and human rights, an effort the Lai Administration is seeking to enhance during a moment of increased trade tensions between Europe and China.[307] Besides the Vatican, which maintains official diplomatic ties with Taiwan, every other European country conducts relations with Taiwan through unofficial channels, with many stipulating their own versions of a "One China policy."[308] The EU also maintains a "One China policy" that recognizes the PRC as the sole legal government of China while maintaining relations and cooperation with Taiwan in a variety of areas.[309] Europe has a vested interested in peace and stability in the Taiwan Strait. An estimated

*The Inter-Parliamentary Alliance on China (IPAC) is a cross-party alliance of 250 lawmakers from 40 legislatures focused on relations with China and the CCP. The alliance was founded in 2020 and works to enhance the visibility of issues related to China and support lawmakers in developing their countries' China policies. Inter-Parliamentary Alliance on China, "Inter-Parliamentary Alliance on China"; Inter-Parliamentary Alliance on China, "About."

†Due to perceptions that IPAC is "anti-China," no KMT representatives attended the IPAC summit. KMT legislator Lin Szu-ming explains that although the KMT did not send any representatives to participate in the summit, it also did not prevent KMT members from participating on their own accord. Yang Yaoru, Wang Yangyu, and Wang Chengzhong, "DPP and TPP Attend as Taiwan Joins IPAC, KMT Members Do Not Participate" (綠白出席台灣加入IPAC 藍委未參與), *Central News Agency*, July 30, 2024. Translation.

40 percent of the EU's external trade passes through the Taiwan Strait, total trade with Taiwan was $73.8 billion in 2023, and some 30,000 Europeans live in Taiwan.[310]

In March 2024, then Vice President-elect Hsiao traveled to four European countries: Belgium, the Czech Republic, Lithuania, and Poland, marking the first visit of an incumbent Taiwan Vice President to Europe.[311] In Brussels, Hsiao met with over 30 European Parliament members, advocating for the uptake of a trade framework between Taiwan and the EU similar to the U.S.-Taiwan 21st Century Trade Agreement.[312] In November 2023, Taiwan and the UK signed an Enhanced Trade Partnership, the first such deal in Europe.[313] The bilateral framework came months after the EU members scuttled an investment agreement between the bloc and Taiwan proposed by the Tsai Administration.[314] Notably, Taiwan Semiconductor Manufacturing Company (TSMC) broke ground on an $11 billion semiconductor fab in Dresden, Germany, in August 2024 after about half the funding was provided in subsidies by the German government.[315]

Former Soviet and Eastern Bloc countries in central and eastern Europe have been among the most outspoken in their support for Taiwan. Their shared experience resisting a threatening revisionist power intent on eroding their national identity has only come into sharper relief since Russia's invasion of Ukraine, opening an opportunity for Taiwan to appeal to these countries' historical sense of self determination.[316] In 2021, Lithuania opened a "Taiwanese Representative Office in Lithuania" using the national nomenclature rather than Beijing-approved "Chinese Taipei," a decision it has upheld despite coming under pressure from China.[317] Taiwan has also stepped up efforts to foster business ties with the region with the $200 million state-backed Central and Eastern Europe (CEE) Investment fund.[318]

Taiwan Increasingly Factored into Indo-Pacific Nations' International Policies

Japan and Taiwan continued to deepen ties, though limitations remain. As discussed above, Japan congratulated Taiwan for a successful democratic election and Lai on his victory, to China's dismay.[319] Lai hosted a delegation of 70 members of Japan's Liberal Democratic Party's Youth Division in August, stating that Taipei and Tokyo have "a shared future."[320] Taiwan's TSMC opened a new plant in Kumamoto, Japan, and Japan increased imports of Taiwanese pineapples, demonstrating Japan's willingness to assist Taiwan in withstanding China's economic coercion.[321] The Japan Coast Guard and Taiwan's CGA carried out a joint maritime exercise.[322] In July 2024, a Taiwan coast guard ship, *Hsun Hu No. 9*, engaged in a search, rescue, and communication drill with the Japan Coast Guard's Sagami patrol vessel after making a port call at Tokyo for supplies of fuel, water, and food.[323] A Chinese Foreign Ministry spokesman protested this event, stating: "We urge Japan to abide by the 'one-China' principle . . . correct its mistakes immediately, not condone and support Taiwan independence separatist forces in any form."[324] Direct Japanese cooperation with Taiwan remains limited, however, as the country lacks a domestic legal framework

for building closer ties, particularly on defense issues.[325] Japan and Taiwan maintain a regular maritime cooperation dialogue but lack any kind of formal security cooperation.[326] While Japan's government has started describing peace and stability in the Taiwan Strait as important to its own security interests in strategic documents, Japanese businesses are wary of economic retaliation should Japan openly enhance ties during peacetime.[327]

Indo-Pacific nations are also increasingly signaling support for maintaining peace in the Taiwan Strait through defense dialogues and training. In August 2024, Australia and Canada released a joint statement on strengthening their bilateral defense relationship that reaffirmed both nations' commitment to deterring conflict in the Indo-Pacific and opposing any unilateral changes to the status quo in the Taiwan Strait.[328] The joint statement of the United States-Japan-South Korea Trilateral Chiefs of Defense Meeting in June 2024 emphasized the importance of peace and stability across the Taiwan Strait.[329] Likely in response to the increased aggressive activities of the CCG around the Philippines, Japan, and Taiwan, Japan conducted its first ever trilateral coast guard exercise with the United States and the Philippines in June 2024.[330] The United States continues to deepen its partnership with the Philippines through joint training and the upgrading of military bases in the Philippines, which may prove vital in the case of a Taiwan contingency.[331] (For more on U.S. alliance-strengthening and deterrence efforts in the Pacific, see Chapter 8, "China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies.")

Taiwan Seeks to Diversify Trade

Taiwan's economy registered strong topline growth in 2024, fueled by global demand for its high-value technology exports as the shift of outbound investment from Taiwan away from the Mainland accelerated. Taiwan's dynamic market economy in 2023 ranked 22nd largest in the world, with a nominal GDP of $753.6 billion, just behind Poland and ahead of Belgium.[332] The island's 23.4 million inhabitants enjoy a high standard of living, with per capita income of $76,900, when adjusted for purchasing power parity, over three times higher than China ($25,000) and nearly on par with that of the United States ($85,400).[333] Taiwan achieved rapid economic advancement through pursuit of an export-oriented growth strategy, and today exports still account for about 70 percent of total GDP.[334] Taiwan is a top trading partner for both China and the United States for important industries, including electronics, information technology, petrochemicals, textiles, steel, cement, autos, pharmaceuticals, and machinery.[335] Notably, Taiwan fabricates 92 percent of the world's most advanced semiconductors, an industry thrust into greater prominence during pandemic-induced supply chain disruptions and continuing with the AI boom.[336] In recent years, the semiconductor industry has accounted for 13–15 percent of Taiwan's total economic output.[337] Despite its prosperity, Taiwan's economy faces a number of external and internal destabilizing forces, including threats from natural disasters, dependency on imported energy, land and housing constraints, a low birthrate and an aging popula-

tion, ongoing economic coercion from China, and the risks of potential shocks from a breakdown in cross-Strait relations.[338]

The stability of the global economic system is inextricably linked to the stability of Taiwan's industries, particularly technology.[339] Semiconductors are a key input across a variety of sectors, including automotive, durable household goods, and consumer electronics. Given Taiwan's critical position in semiconductor supply chains, a disruption to Taiwan's output would increase prices across the board. Staff economists from the U.S. International Trade Commission estimated that, in the event of a major disruption of output in Taiwan, the cost of logic chips may increase as much as 59 percent for buyers in the United States.[340] The authors stipulate this is a lower bound estimate—they suggest price increases would be much higher after accounting for U.S. imports of downstream products assembled with Taiwan chips.* [341] The impact on the global economy from a disruption to Taiwan's output would likely dwarf Russia's 2022 invasion of Ukraine, as recent projections from Bloomberg Economics estimate a 5 percent drop in global GDP from a blockade scenario and a 10 percent drop in the event of Chinese invasion, equivalent to a cost of $10 trillion.[342]

Taiwan's Domestic Economy

Taiwan posted strong topline economic numbers to start 2024, resurgent on the back of global demand for advanced chips used for AI applications.[343] The government's statistical bureau reported a year-over-year real GDP growth rate of 6.56 percent in Q1 and 5.09 percent in Q2, fueled by 11.4 percent year-over-year export growth.† [344] The Taiwan Stock Exchange (TWSE) has been on an extended bullish run since October 2022; the weighted stock index is up 26.1 percent in the 2023 calendar year and 24 percent through Q3 of this year.[345] Over this period, Taiwan's stock market has outperformed most exchanges globally, including U.S. exchanges, where the S&P 500 grew 24.2 percent in 2023 and is up 20.8 percent through Q3 2024.[346] The market capitalization of Taiwan's largest company, TSMC, stood at $805.1 billion (NTD 25.6 trillion)‡ on September 30, 2024, over one-third of the total value of the 997 companies listed on the TWSE.[347] So far this year, TSMC is responsible for about 70 percent of total market capitalization growth of all companies listed on the exchange and has reported net revenue of $63.8 billion (NTD 2 trillion) through the first three quarters of 2024, a 31.9 percent year-over-year increase.[348]

Beyond accelerated growth in the export sectors and the equity markets, key domestic economic indicators remained steady. The unemployment rate was 3.48 percent in August 2024, and despite concern over rising energy costs, inflation as measured by the con-

*Their model also assumes that chips from China could be used to replace supply from Taiwan, which may also cause them to underestimate the price impact. Lin Jones et al., "U.S. Exposure to the Taiwanese Semiconductor Industry," *U.S. International Trade Commission*, November 2023, 26.

†It should be noted that a strong base effect is present in the GDP growth figure for Q1, as the growth rate a year prior was -3.49 percent. For this reason alone, GDP growth for the remaining quarters in 2024 is expected to moderate, with official estimates forecasting 3.94 percent GDP growth for the whole of 2024.

‡Unless noted otherwise, this section uses the following exchange rate throughout: $1 = NTD 31.8.

sumer price index (CPI) has remained relatively low at just under 2 percent.[349] After ticking up interest rates 12.5 basis points in March 2024, Taiwan's central bank held its benchmark discount rate at 2.00 percent in June.[350] Real average wage growth grew in the first half of 2024 for the first time in three years.[351] The price of housing remains exorbitantly high, with the average price of a dwelling in Taipei hovering around 16 times the average annual income, higher than London (8.6 times), New York (5.9 times), or Vancouver (13 times).[352] Constrained land, high savings rates, and speculation contributed to surging housing prices starting after the 2008 global financial crisis, yet since 2015 the unaffordability issue has moved out of Taipei to smaller cities around the island.[353] However, some observers believe decreasing overall population* will alleviate price pressure on housing in the coming years.[354] In August 2024 consumer confidence reached its highest level since March 2020.[355]

Trade and Investment

Taiwan is a heavily trade-dependent economy. In 2023, Taiwan's total goods and services trade with the world was $783 billion, with exports of $432 billion and imports of $352 billion, resulting in an $81 billion trade surplus.[356] Through September 2024, exports and imports are each up 10.2 percent from the same period in 2023.[357] China was Taiwan's top trading partner in 2023, accounting for almost 30 percent of trade (the Mainland accounted for 21.2 percent, and Hong Kong and Macau accounted for an additional 7.4 percent).[358] The United States (14.9 percent), Japan (9.7 percent), and South Korea (6.0 percent) round out Taiwan's top five trading partners.[359] China was the top export market for Taiwan's products in 2023 (Mainland $95.7 billion; Hong Kong and Macau $56.6 billion), followed by the United States ($76.2 billion) and Japan ($31.4 billion).[360] Exports to the United States have outpaced exports to the Mainland through the first half of 2024, marking the first time this has been the case since 2003.[361]

Under the DPP, Taiwan has pursued policies to diversify its economic and trade relationships in recognition of the vulnerabilities of being reliant on China as its top trade partner. In 2016, the Tsai Administration established the Office of Trade Negotiation as an independent agency under the Executive Yuan, headed up by the minister without portfolio.[362] As part of this drive to recalibrate the trade profile, Taiwan's government has sought to join existing multilateral agreements like the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP), ink new bilateral agreements, and promote its own regional initiatives, namely the Tsai Administration's flagship New Southbound Policy (NSP).[363]

Taiwan Presses for Ascension to the CPTPP

Three years after formally applying for membership in the CPTPP, the multilateral successor to the Trans-Pacific Partnership, Taiwan

*Taiwan has one of the lowest fertility rates in the world at 0.87 children per female. Taiwan's National Development Council assesses if the total fertility rate stabilizes at the projected rate of 0.9 the population is estimated to shrink from 23 million in 2023 to 15 million in 2070. Fuxian Yi, "The Demographic Costs of a War Over Taiwan," *Diplomat*, April 10, 2024; Eric Cheung, "Taiwan Needs More Babies. But Conservative Traditions Are Holding Back Some Fertility Solutions," *CNN*, March 30, 2024.

officials have identified an opportunity in 2024 to clear the initial screening process for entry.[364] The United States is not a participant in the CPTPP, a comprehensive agreement that includes relatively high environmental, labor, and investment standards, market access provisions for both goods and services, and a dispute settlement mechanism.[365] To date, the UK has been the only country to join through an accession process, bringing the trade bloc to a combined 15 percent of global GDP.[366] For Taiwan, CPTPP members represent 24 percent of its total annual international trade, and the National Development Council estimates joining would result in a 2 percent increase to GDP.[367] China applied to join the CPTPP less than a week before Taiwan in 2021, complicating Taiwan's efforts to join the agreement.[368] Thus far, no member country has dismissed either China or Taiwan's prospects of joining, though some analysts doubt that all CPTPP countries would support Taiwan's accession given risks of retaliatory action from China.[369]

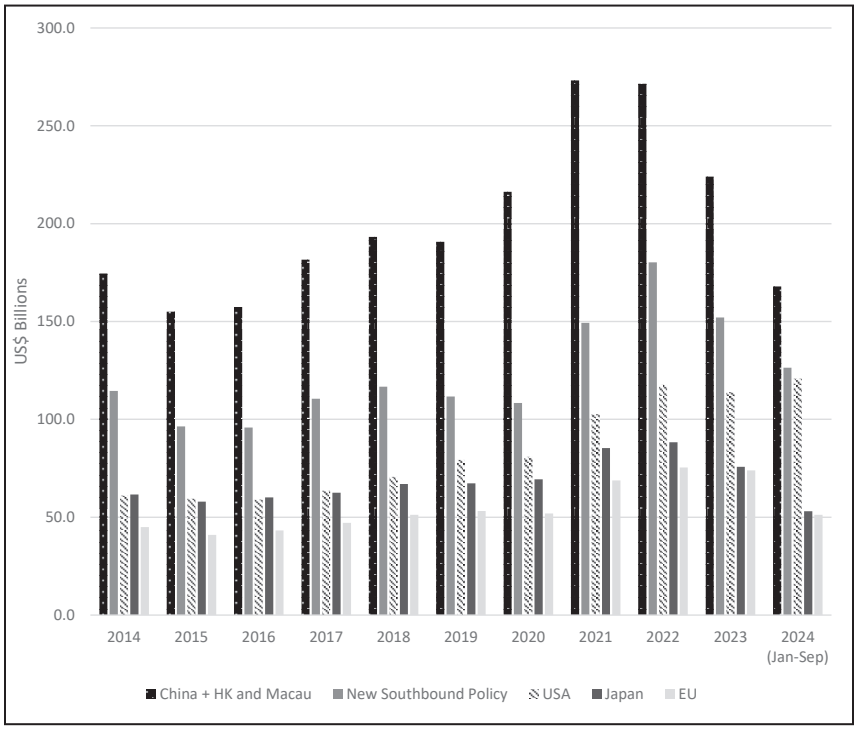
The next meeting of the CPTPP Executive Committee where members will likely take steps to consider both applications is set to take place in the latter half of 2024.[370] Canada is the rotating chair for the year and will host the meeting, a situation Taiwan officials have described as a "window of opportunity" given close ties and the recent completion of a bilateral investment agreement between Ottawa and Taipei.[371] If Taiwan's application proceeds, the next step would be establishment of an Accession Working Group to negotiate details of accession before a process requiring unanimous approval.[372]

"New Southbound Policy"

A central pillar of Taiwan's recent efforts to reduce trade reliance on China has been to establish its own framework for stronger economic and cultural ties with Indo-Pacific nations, a policy the Lai Administration has signaled intent to continue. Announced in 2016, the New Southbound Policy (NSP) was a flagship element of Tsai Ing-wen's foreign policy and economic diversification strategy seeking to draw Taiwan closer to 18 countries in south Asia, southeast Asia, and Oceania.*[373] Along with promoting closer economic and trade relationships, the NSP prioritized cultural and people-to-people ties; resource-sharing in medical, agricultural, technology, and small and medium-sized enterprises; and expanded opportunities for official engagement on multilateral and bilateral trade agreements.[374] Aggregate trade between Taiwan and these countries increased 58.9 percent between 2016 and 2023 from $95.8 billion to $152.2 billion, outpacing the 54.2 percent total trade increase by Taiwan over the same period (see Figure 4).[375] While campaigning, President Lai indicated an intention to maintain the NSP in its current form and in June 2024 announced an investment agreement with Thailand to add to similar agreements signed since 2016 with India, Vietnam, and the Philippines.[376]

*New Southbound Policy countries are Australia, Bangladesh, Bhutan, Brunei, Cambodia, India, Indonesia, Laos, Malaysia, Burma (Myanmar), Nepal, New Zealand, Pakistan, the Philippines, Singapore, Sri Lanka, Thailand, and Vietnam.

Figure 4: Taiwan's Total Trade with Top Trading Partners (2014–September 2024)



Source: Taiwan's International Trade Administration, *Trade Statistics*.

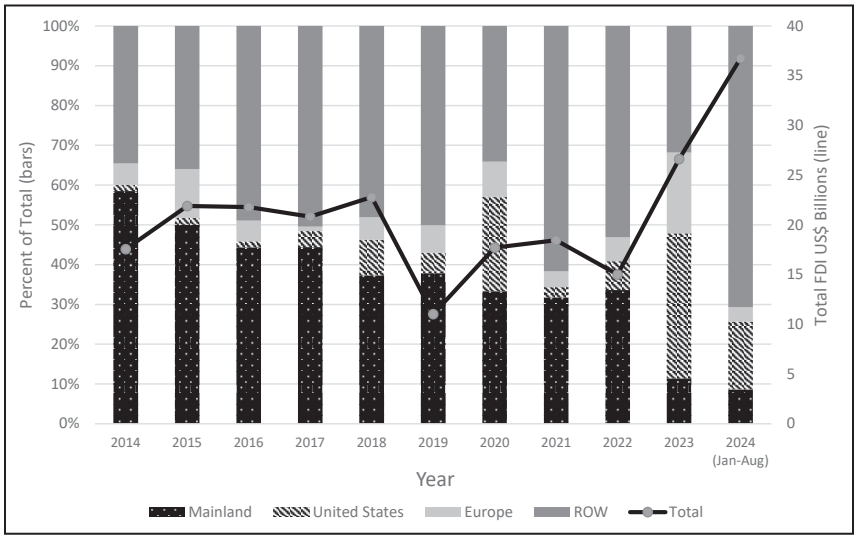
Taiwan Business Community Shifts Focus of Investment out of the Mainland

The shift of outbound investment flows away from China gained momentum in 2023 after years of slow movement by the business community to substantively diversify operations, though significant dependency remains given the cumulative stock of capital investment. Many of the reasons behind this shift are consistent with a similar shift in other advanced economies, driven by increased secular risk from China and concerns about the uncertainty stemming from Xi Jinping's economic and regulatory policies.[377] Flows of approved outbound FDI from Taiwan globally jumped from $15 billion in 2022 to $26.6 billion in 2023 thanks to investment by digital and information technology companies in overseas manufacturing facilities.[378] Between 2013 and 2022, annual approved outbound FDI averaged $18.2 billion, with investment into the Mainland accounting for an average portion of 43.4 percent.[379] China's share of Taiwan's annual FDI flows had slowly declined over that decade (from about 65 percent in 2013 to about 30 percent in 2021), but 2023 could signal a major acceleration of the trend. Approved outbound investment from Taiwan into the Mainland dropped off nearly 40 percent in 2023, accounting for merely 11.4 percent of total approved outbound FDI for the year.[380] By contrast, investment into the United

States and Europe surged 791 percent and 502 percent year-over-year, respectively, and together they accounted for 56.7 percent of Taiwan's total approved outbound FDI (see Figure 5).[381] A large portion of these increases are attributable to major investments by TSMC in semiconductor production facilities in Arizona and Dresden, Germany.[382] In April 2024, TSMC announced it would expand its planned investment in the United States over 60 percent to $65 billion after receiving a $6.6 billion federal grant as part of the CHIPS and Science Act.[383]

It is worth noting that Taiwan's total FDI stock in China remains significant, as announced FDI projects from Taiwan-based companies into the Mainland totaled $139 billion in the two decades from 2003 to 2023, compared to $64.9 billion in the United States.[384] Taiwan's top businesses, including Foxconn, TSMC, and Acer, remain dependent on Chinese-based manufacturing for a significant portion of their supply chains.[385] This dependency remains a considerable source of leverage for China over Taiwan, would require years to alter, and likely would be accompanied by high costs and disruptions to output.[386] Furthermore, the deep cross-Strait business ties complicate Taiwan's domestic politics. For instance, in October 2023, China's Ministry of Commerce (MOFCOM) announced an investigation into Foxconn, owned by Terry Gou, who at that time was an independent candidate for president of Taiwan. The move was largely seen as political in nature, as Gou's candidacy was likely to pull votes away from China's preferred candidate.[387] Lastly, as of 2022 there were 177,000 Taiwan citizens working in mainland China, a point of growing concern given the recent increase of detentions and arrests of Taiwan citizens by Chinese authorities under expanding national security and anti-espionage laws.[388]

Figure 5: Taiwan Outbound FDI Annual Flows by Region (2014–August 2024)



Note: ROW stands for rest of world.
Source: Taiwan's Ministry of Economic Affairs, *Economic Indicators: Approved Outbound Investment by Area*, October 2024.

Heavy Reliance on Fuel Imported by Sea Persists despite Effort to Reconfigure Energy Grid

With scant natural energy resources of its own and a decision to largely abandon nuclear energy, Taiwan is heavily dependent on energy imports. Such import dependence makes Taiwan particularly vulnerable to a blockade. In 2023, crude oil and petroleum made up the largest portion of Taiwan's total energy mix (44.0 percent), followed by coal (28.8 percent), natural gas (20.3 percent), nuclear (3.9 percent), and renewables (3.0 percent).[389] Imported energy comprised 96.7 percent of Taiwan's annual energy supply.*[390]

Nuclear power has become a point of contention in the island's domestic politics and a key consideration for assessing Taiwan's preparedness to withstand an external energy shock.[391] Construction on three nuclear power plants began in the 1970s, and their combined power generation provided nearly 50 percent of total electricity production by the mid-1980s.[392] However, in the wake of the Fukushima nuclear incident in 2011, concerns grew over the risk of reactors on an earthquake-prone island, leading the DPP to announce plans to phase out nuclear power completely.[393] In July 2024, one of two units at the last operational nuclear plant on the island was decommissioned, with the second unit slated to shutter in May 2025.[394] Though a majority of citizens still support the reduction of nuclear reactors, a slew of high-profile power outages in recent years has increased concern over the grid's ability to effectively manage demand.[395] Furthermore, increased industrial production in the semiconductor and manufacturing sectors has steadily raised demand for electricity and resulted in surging energy rates.[396] Thus far, broader prices have been largely unaffected by energy costs as Taiwan's government has provided heavy subsidies to offset sustained losses of the state power company, though recently prices for industrial consumers have begun to increase.[397]

Starting in 2016, the DPP sought to accelerate the adoption of clean energy† and improve the power system's resilience by setting ambitious targets for an electricity generation mix of 50 percent natural gas, 30 percent coal, and 20 percent renewables by 2025.[398] The amount of clean energy Taiwan uses to generate electricity stood at 16.1 percent in 2022, half that of the average for the whole of Asia and well behind China's 34.9 percent.[399] Though the Tsai Administration made strides toward increasing renewable energy capacity and building out liquified natural gas (LNG) facilities and infrastructure, in 2023, natural gas-fired plants generated 39.5 percent of the island's power, coal-fired 42.2 percent, and renewables 9.5 percent—leading to a reduction of the 2025 renewable energy target downward to 15 percent.[400]

Beyond concerns over how energy constraints may raise prices or fail to meet peak demand during peacetime, the proposal to incorporate more clean energy and natural gas has implications for China's ability to disrupt power during a military operation against the island. The government's current stockpile requirements man-

*Taiwan's government includes nuclear in import figures, as uranium used in domestic reactors is sourced elsewhere. Joseph Webster, "Does Taiwan's Massive Reliance on Energy Imports Put Its Security at Risk?" *Atlantic Council*, July 7, 2023.

†Clean energy includes wind, solar, hydro, nuclear, biomass, and other renewables. Ember, "Data into Action."

date that oil operators and importers maintain a 60-day supply—on top of a national 30-day strategic reserve—and eight days of natural gas.[401] Given that natural gas generates nearly 40 percent of electricity and is set to increase to 50 percent, major disruptions would occur from a one- to two-week blockade once the stockpile was depleted.*[402] Currently there are two operational LNG terminals, the largest in the southern city Kaohsiung and another in Taichung, from which gas is piped to major cities along the western coast and in the north.[403] Three new LNG receiving terminals are planned, as well as expansion of the existing facilities.[404] Resupplying LNG would be difficult to impossible under a maritime blockade enforced by China.[405]

Cross-Strait Economic and Trade Relations

Economic and trade relations between the PRC and the government of Taiwan have steadily deteriorated since President Tsai Ing-wen was first elected in 2016, a signal of Beijing's willingness to use economic levers to signal displeasure with the ruling DPP and attempt to coerce Taiwan into submission.

Economic Coercion Enters a New Phase Post-Election

Along with stepping up its rhetoric and military exercises in the immediate aftermath of Lai's inauguration on May 20, 2024, Beijing announced on May 29 that it would impose punitive trade measures on 134 export products from Taiwan.[406] This is the latest move in a concerted pressure campaign carried out by MOFCOM to weaponize cross-Strait trade. In 2021, China banned imports of pineapples from Taiwan and a handful of other food products, citing sanitary and phytosanitary issues.[407] However, there was a clear correlation between the southern rural districts that produce the majority of products subject to bans and the historically high levels of support for the DPP in these districts.[408] Over the course of 2022 and 2023, China continued to ban imports that accounted for a small portion of cross-Strait trade but for which producers relied on the mainland market; the bans were often timed around political events Beijing took issue with, like then Speaker of the U.S. House of Representatives Nancy Pelosi's visit to Taipei in August 2022.[409]

China laid the groundwork for the recent bans with a sprawling trade probe launched last year at the onset of Taiwan's campaign cycle that intended to threaten rollback of preferential trade arrangements contingent upon the outcome of the election. In April 2023, one week after then President Tsai met with then Speaker of the U.S. House of Representatives Kevin McCarthy and one day after Lai Ching-te announced his candidacy, MOFCOM announced it was launching a unilateral investigation into nearly 2,500 products it alleged Taiwan subjected to unfair restrictions, including agricultural, plastic, metal, and chemical products.[410] The investigation was set to expire one day before Taiwan's election and carried the implicit threat of revoking in part or completely the Economic Coop-

*Taiwan is expected to have 20 days of LNG storage capacity by 2025. However, total storage capacity of LNG is limited by atmospheric evaporation called "boiling off" that afflicts this fuel when stored in large quantities. S&P Global, "Taiwan Vulnerable to LNG Supply Risks in the Event of a Maritime Blockade," May 30, 2024; Taiwan Ministry of Economic Affairs Energy Administration, *Stable Supply of Natural Gas*, February 21, 2024.

eration Framework Agreement (ECFA) between China and Taiwan that reduced tariffs on a broad swath of cross-Strait trade since its enactment in 2010.*[411] Taiwan's premier denied the allegations of unfair trade barriers, saying the investigation was clearly intended to influence voters and did not adhere to dispute resolution channels under the WTO, of which both sides are members.[412] Less than a month before the election, China suspended preferential tariffs on 12 petrochemical products under the ECFA.[413] After the election, as noted above, China expanded suspensions of preferential tariffs to the 134 export products previously mentioned, including chemical products, textiles, metals, rubbers and plastics, and machinery, for which China comprises 16–35 percent of Taiwan's exports.[414] Confirming the political nature of its trade actions, on April 28, 2024, MOFCOM announced it would lift the ban on some Taiwan fruit and seafood products after KMT legislative caucus leader Fu Kun-chi visited the Mainland and expressed support for Beijing's interpretation of the 1992 Consensus.[415]

China Continues Efforts to Acquire Taiwan's Technology, Talent, and Knowhow

In recent years, Chinese companies and the government have increasingly carried out licit and illicit efforts to obtain trade secrets from Taiwan's leading firms in industries of strategic importance. No economy is more integrated in global semiconductor supply chains than Taiwan's, with its national champion TSMC responsible for producing leading-edge logic chips, including those designed by NVIDIA for AI training and the 3nm chips that power Apple smartphones.[416] In February, Taiwan's representative in the United States Alexander Yui said of China's chip makers that they "cheat" and "steal" technology.[417]

National security laws on the island were tightened in 2022 to prohibit Chinese investment in certain parts of the industry and the transfer of trade secrets, making it difficult for Chinese chip companies to legally operate in Taiwan.[418] That same year, Taiwan's Investigation Bureau opened around 100 probes into Chinese companies suspected of illegally poaching Taiwan technology talent.[419] Chinese competitors often look to poach workers from Taiwan by offering salaries two to three times higher in some cases.[420] In April 2024, four Taiwan nationals were convicted of poaching on behalf of Chinese tech companies, and in May authorities named eight companies accused of conducting illegal operations in Taiwan and poaching talent, including Chinese Apple supplier Luxshare Precision Industry and Zhejiang Dahua Technology, a company currently on the U.S. Entity List.[421]

Taiwan's coveted engineering workforce would become an even more significant strategic asset in the event of a Chinese invasion. If invasion appears imminent, Benjamin Noon of the Vandenberg Coalition and Allison Schwartz, formerly of the American Enterprise Institute, have advocated for evacuating Taiwan's semiconductor engineers in an effort akin to the allied Operation Paperclip that

*For more background on the ECFA and evolution of the cross-Strait trade relationship, see U.S.-China Economic and Security Review Commission, Chapter 5, Section 2, "Taiwan," in *2023 Annual Report to Congress*, November 2023, 615–616.

brought German scientists to the United States in the twilight days of World War II.[422] This proposal would seek to relocate them at foundries in the United States and allied nations to ramp up production and curb the ensuing supply shock.[423] As discussed previously, staff from the U.S. International Trade Commission released a working paper in November 2023 that projected a 58.6 percent average price increase for logic chips in the U.S. market in the hypothetical event of a major disruption to Taiwan's semiconductor output, noting this may be a conservative estimate.[424]

The continued operation of Taiwan's chip fabs would be subject to other constraints beyond staffing during a blockade. The deeply integrated supply chains for semiconductor fabrication inputs such as chemicals, silicon, and photomasks are mainly supplied by the United States and its allies and, if cut off, would inhibit utilization of the facilities.[425] TSMC Chair Mark Liu has stated that it would be impossible to take TSMC by force because operations depend on "real-time connection with the outside world [for] materials to chemicals to spare parts to engineering software and diagnosis."[426] Chemicals, gases, and other raw materials used in fabs are sourced from a few suppliers and spoil in a matter of months, which would render the facilities inoperable after existing supplies run out.[427] Furthermore, the Dutch company ASML reportedly claimed in May 2024 that in the event of a Chinese invasion they maintain the capability to remotely disable their $217 million extreme ultraviolet machines used to etch silicon wafers in TSMC's fabs.[428]

U.S.-Taiwan Economic and Trade Relations

Taiwan is a key trade partner of the United States, and over the past year efforts to enhance ties by both Taipei and Washington have resulted in substantial investment announcements and continued progress on substantive agreements like the U.S.-Taiwan Initiative on 21st Century Trade. According to the U.S. Bureau of Economic Analysis data, Taiwan ranked 13th among U.S. trade partners on the basis of total two-way trade in goods and services in 2023 ($152 billion), behind France and ahead of Singapore.[429] Looking at only goods trade in 2023, Taiwan was the United States' seventh-largest merchandise trading partner ($128 billion), tenth-largest export market ($40 billion), and eighth-largest source for imports ($88 billion).[430]

Trade Negotiations Progress

Negotiations for the U.S.-Taiwan Initiative on 21st Century Trade remain ongoing.[431] The initiative was announced in June 2022 and seeks to reach commitments and "economically meaningful outcomes" in 11 areas as part of its negotiating mandate, according to the Office of the U.S. Trade Representative.[432] A first agreement was signed on June 1, 2023—exactly one year after the initiative was announced—and covered four of the 11 issue areas: customs administration and trade facilitation, regulatory practices, anticorruption, and small and medium-sized enterprises.[433] These issue areas were seen as the less complex areas where interests and existing regulations between the two parties were already in relative alignment.[434]

In April 2024, negotiators convened an in-person round of talks on issues pertaining to agriculture, environment, and labor as part of efforts to reach a second-stage agreement on the next three mandate areas.[435] If this stage of negotiations concludes successfully, the remaining mandate areas of digital trade, standards, state-owned enterprises, and non-market policies and practices will be addressed in a final stage.[436]

To date, these negotiations do not include traditional "market access" issues (e.g., tariffs, services market access) or investment protections. Additionally, it is not clear if the broader U.S. suspension of digital trade negotiations in the Indo-Pacific Economic Framework for Prosperity (IPEF) following withdrawal of U.S. support for standards at the WTO will apply to the digital chapter in these negotiations.[437]

Implications for the United States

Taiwan remains a potential flashpoint for conflict with China. China's leadership has expressed its intention to bring the island under its control and has not deviated from its goal of unification. Beijing has made it clear that it is willing to use a wide variety of methods to achieve this goal, from information operations to shape Taiwan's public opinion to the use of force. While Lai's election raises concerns in Beijing, the DPP's position as a minority government is likely to be interpreted by Chinese leadership as a sign of weakness and potential opportunity to further its agenda through engagement with the opposition. This interpretation will likely result in Beijing intensifying its pressure campaign on the DPP, raising the risk for miscalculation between not only China and Taiwan but possibly also China and the United States.

While the Lai Administration is clear in its intent to adopt an asymmetric defense strategy, China's pressure campaign presents challenges to the adoption of that strategy, as Taiwan will have to make complex decisions about resource allocation between countering China's gray zone activities or following through on adopting equipment more appropriate for countering an invasion. The United States can assist Taiwan in both countering China's gray zone efforts and in providing materiel for its asymmetric strategy, but challenges exist in the rapid armament of Taiwan. U.S. defense industrial base manufacturing limitations and extended delivery timelines mean that at the current rate, Taiwan is unlikely to be armed to a degree sufficient to deter or counter China from invading on its own, and so it will rely on the United States to provide for its deterrence as the PLA continues to approach its 2027 and mid-century modernization goals. Even if it can be deterred from outright invasion, China continues to build the capability to quarantine or blockade the island, which represents a unique challenge for U.S. and Taiwan leaders.

Cross-Strait economic relations have significantly deteriorated given Beijing's increased intimidation and economic coercion activities. Though China remains Taiwan's top trading partner, exports to the United States have surged since late 2023, driven in large part by demand for advanced integrated circuits used for AI and advanced computing. This coincides with substantial investment by

TSMC in production facilities outside of Taiwan, including construction of three semiconductor foundries in Arizona capable of producing cutting-edge logic chips. In the meantime, Taiwan remains by far the most dominant in production of advanced semiconductors, and any disruption to output on the island will have major ramifications for the global economy and—more importantly—U.S. national and economic security.

Appendix I: Beijing's "One China Principle" and the U.S. "One China Policy"

Though Beijing attempts to conflate the issue of "One China," Beijing's "One China principle" and the U.S. "One China policy" are very different. Beijing's One China principle claims that Taiwan is an inalienable part of the People's Republic of China (PRC). In contrast, the U.S. One China policy does not take an official stance on the PRC's claim to sovereignty over Taiwan. Rather, the United States only "acknowledges" Beijing's position "that there is but one China and Taiwan is part of China."[438]

Beijing's "One China Principle"

Beijing's One China principle insists that "there is only one China in the world, Taiwan is part of China, and the government of the PRC is the sole legal government representing the whole of China."[439] According to a Chinese government white paper on Taiwan published in February 2000, Beijing developed the One China principle after the 1949 founding of the PRC in order to establish diplomatic relations with other countries while safeguarding its national sovereignty and territorial integrity.[440] Nevertheless, prior to 1949, CCP leaders had sometimes expressed explicit support for Taiwan's independence. In 1936, Mao Zedong, who had recently consolidated his position as the dominant figure in the CCP, told American journalist Edgar Snow that the CCP would support Taiwan in its "struggle for independence" from Japanese imperialism.*[441] While CCP authorities have consistently claimed sovereignty over Taiwan since 1949, the specific term "One China principle" was not widely used until the 1970s, and the phrase only became a mainstay of official Chinese government rhetoric in the 1990s and early 2000s.†[442] The PRC's first white paper on Taiwan in 1993 only mentioned the "principle of one China" in passing on four occasions.[443] In contrast, China's 2000 white paper on Taiwan was titled "The One China Principle and the Taiwan Issue" and uses the term on 41 separate occasions.[444] Since the early 2000s, the "One China principle" has been ubiquitous in Chinese propaganda about Taiwan, and Chinese officials often repeat the false claim that all countries with which it has established diplomatic relations accept the "One China principle."[445]

Beijing's Use of "Reunification"

In Chinese propaganda, the "One China principle" is closely associated with Beijing's stated goal of achieving "reunification" with Taiwan.[446] Beijing uses the term "reunification" to refer to the pro-

*These interviews were published in Edgar Snow's 1937 book, *Red Star Over China*. Chinese translations of *Red Star Over China* continued to include Mao's quote supporting Taiwan independence until at least 1979. More recent Chinese editions of the book, however, have censored Mao's comment on Taiwan. Edgar Snow, *Red Star Over China* (New York: Grove Press, 1994), 110; Edgar Snow, *Red Star Over China* (西行漫记) (Beijing: SDX Joint Publishing Company, 1979), 83–84. Translation; Edgar Snow, *Red Star Over China* (西行漫记) (Beijing: Foreign Language Teaching and Research Press, 2005), 146. Translation.

†The first use of the term "One China principle" (一个中国的原则) in *People's Daily* was not until March 1971. *People's Daily*, "The Japanese Reactionary Faction's Ambition to Plot to Re-Occupy China's Taiwan Province Is Exposed" (日本反动派阴谋重新霸占我台湾省的野心毕露), March 21, 1971, 6. Translation.

cess of absorbing Taiwan as an inalienable part of the state called "China" and to imply that cross-Strait relations are "purely an internal matter for China."[447] In contrast, Taiwan, the United States, and some international observers generally avoid the term "reunification" because Taiwan has never been governed by the PRC.*[448] This report uses the term "reunification" only when quoting CCP sources and sources that conform to CCP preferences. The choice to use "unification" or "reunification" is primarily an issue for English-language sources, as both words are used to translate the same Chinese-language term, *tongyi* ("to unite as one"). Nevertheless, the CCP has not always used the English term "reunification" to describe its ambition to rule Taiwan. After 1949, Beijing vowed to "liberate" Taiwan from Chiang Kai-shek and the Kuomintang by military means before adopting the term "peaceful liberation" in the mid-1950s in a reexamination of its policies and an attempt to sway Chiang's government toward a negotiated political settlement.[449] It was not until the 1970s that the CCP consistently replaced "liberation" with "reunification."[450] Deng Xiaoping made this change in terminology official during his visit to the United States in 1979, speaking of "reunifying the motherland" and telling U.S. senators that China "no longer use[s] the term 'liberation of Taiwan.'"[451] Xi Jinping and CCP leaders now refer to the "complete reunification" of China—by which they mean imposing PRC sovereignty over Taiwan—as "indispensable for the realization of China's rejuvenation."[452] China's 2022 white paper on Taiwan uses the term *tongyi* (translated in English as reunification) no fewer than 124 times.[453]

The U.S. "One China Policy"

Despite Beijing's false claim that China and the United States established diplomatic relations "on the basis of the One China principle," the U.S. One China policy does not take a position on sovereignty over Taiwan. As articulated by the U.S. Department of State Bureau of East Asian and Pacific Affairs: "The United States has a longstanding one China policy, which is guided by the Taiwan Relations Act, the three U.S.-China Joint Communiques, and the Six Assurances."†[454] Significantly, in the 1978 U.S.-China Joint Communique, which established diplomatic relations between the United States and the PRC, the United States reaffirmed it only "acknowledges" (but does not endorse) "the Chinese position that

*English-language statements published by Taiwan's government, including the Mainland Affairs Council and Ministry of Foreign Affairs, generally refer to China's pursuit of "unification" with Taiwan. The U.S. government generally does not use either "unification" or "reunification" in official statements pertaining to cross-Strait relations, which instead refer to the United States' opposition to "any unilateral changes to the status quo from either side." Major international newspapers, including the *New York Times* and *Washington Post*, also generally use the term unification. Taiwan's Mainland Affairs Council, *MAC 2024 First Quarter Report on the Situation in Mainland China*, May 6, 2024; Taiwan's Ministry of Foreign Affairs, *MOFA Response to False Claims Made in Joint Communiqué between PRC and Russia Regarding Taiwan*, December 22, 2023; U.S. Department of State Bureau of East Asian and Pacific Affairs, *U.S. Relations with Taiwan: Bilateral Relations Fact Sheet*, May 28, 2022; Chris Buckley and Christ Horton, "Xi Jinping Warns Taiwan That Unification Is the Goal and Force Is an Option," *New York Times*, January 1, 2019; Adela Suliman, "China's Xi vows peaceful 'unification' with Taiwan Days after Sending a Surge of Warplanes near the Island," *Washington Post*, October 9, 2021.

†A detailed explanation of the Taiwan Relations Act (1979), Three Joint Communiques (1972, 1978, 1982), and the Six Assurances (1982) can be found in the Commission's 2019 Annual Report. U.S.-China Economic and Security Review Commission, *2019 Annual Report to Congress*, November 2019, 452–453.

there is but one China and Taiwan is part of China."* [455] Beijing has obfuscated this distinction through deliberate mistranslation. The Chinese text of the 1978 Communique translates "acknowledges" as *chengren* ("to recognize"), a term that in Chinese clearly implies U.S. agreement with China's position.[456] In contrast, the Chinese text of the 1972 Joint Communique, which first articulated each respective government's position on Taiwan, had translated "acknowledges" as *renshi* ("to be aware of"), a term that more faithfully conveys the meaning of the English text.[457]

According to its One China policy, the United States:

- "Oppose[s] any unilateral changes to the status quo from either side";
- "[Does] not support Taiwan independence";
- "Expect[s] cross-Strait differences to be resolved by peaceful means"; and
- "Continue[s] to have an abiding interest in peace and stability across the Taiwan Strait."[458]

In line with the Taiwan Relations Act (1979), the United States also makes available defense articles and services to Taiwan "as necessary to enable Taiwan to maintain a sufficient self-defense capability" and maintains its own ability to resist any use of "force or other forms of coercion that would jeopardize the security, or the social and economic system, of Taiwan."[459]

*In the 1972 Joint Communique, the "U.S. side declared [that] the United States acknowledges that all Chinese on either side of the Taiwan Strait maintain there is but one China and that Taiwan is a part of China. The United States Government does not challenge that position. It reaffirms its interest in a peaceful settlement of the Taiwan question by the Chinese themselves." American Institute in Taiwan, *U.S.-PRC Joint Communique (1972)*, March 31, 2022.

Appendix II: U.S. Military Sales to Taiwan, September 2023–September 2024

Date of State Department Approval*	Content of Purchase	Value
December 15, 2023[460]	Follow-on life cycle support to maintain Command, Control, Communications, and Computers (C4) capabilities managed under its Syun An program. The C4 capabilities consist of previously procured Multifunctional Information Distribution Systems-Low Volume Terminals (MIDS-LVT) and Joint Tactical Information Distribution System (JTIDS) equipment as well as procurement of spare and repair parts; repair and return of equipment; technical documentation; personnel training; software and hardware; software development; maintenance of Continental United States (CONUS) technical laboratories; U.S. government and contract engineering and technical support; logistics; and other related elements of logistics and program support.	$300 million
February 21, 2024[461]	Foreign Military Sales (FMS) Cross Domain Solutions (CDS); High Assurance devices; Global Positioning System (GPS) receivers; communications equipment; requirements analysis; engineering; technical services; and other related elements of logistics and program support.	$75 million
June 5, 2024[462]	Standard spare and repair parts, components, consumables, and accessories for F-16 aircraft; U.S. government and contractor engineering, technical, and logistics support services; and other related elements of logistics and program support.	$220 million
June 5, 2024[463]	Non-standard spare and repair parts, components, consumables, and accessories for F-16 aircraft; U.S. government and contractor engineering, technical, and logistics support services; and other related elements of logistics and program support.	$80 million

*According to the U.S. Defense Security Cooperation Agency, the Foreign Military Sales (FMS) program is a form of security assistance authorized by the Arms Export Control Act (AECA), as amended by 22 U.S.C. 2751, et. seq., and a fundamental tool of U.S. foreign policy. Under Section 3 of the AECA, the United States may sell defense articles and services to foreign countries and international organizations when the president formally finds that to do so will strengthen the security of the United States and promote world peace. Under the FMS program, the U.S. government and a foreign government enter into a government-to-government agreement called a Letter of Offer and Acceptance (LOA). The secretary of state determines which countries will have programs. The secretary of defense executes the program. See Defense Security Cooperation Agency, *Foreign Military Sales (FMS)*.

Appendix II: U.S. Military Sales to Taiwan, September 2023–September 2024—*Continued*

Date of State Department Approval	Content of Purchase	Value
June 18, 2024[464]	Up to 291 ALTIUS 600M-V systems, composed of an Unmanned Aerial Vehicle (UAV) loitering munition with extensible warhead and electro-optical/infrared (EO/IR) camera; ALTIUS 600 inert training UAVs; Pneumatic Integrated Launch Systems (PILS); PILS transport trailers; ground control systems; associated support, including spares; battery chargers; operator and maintenance training; operator, maintenance, and training manuals; technical manuals; logistics and fielding support; testing; technical assistance CONUS and OCONUS, including for engineering services; program management; site surveys; facility, logistics and maintenance evaluations; quality assurance and de-processing team support; field service representative support; transportation; and other related elements of logistics and program support.	$300 million
June 18, 2024[465]	Seven hundred twenty (720) Switchblade 300 (SB300) All Up Rounds (AURs) (includes 35 fly-to-buy AURs) and one hundred one (101) SB300 fire control systems (FCS). The following non-Major Defense Equipment will also be included: first line spares packs; operator manuals; operator and maintenance training; logistics and fielding support; Lot Acceptance Testing (LAT); U.S. government technical assistance, including engineering services, program management, site surveys, facilities, logistics, and maintenance evaluations; quality assurance and de-processing team; field service representative(s); transportation; and other related elements of logistics and program support.	$60.2 million
September 16, 2024[466]	Return, repair, and reshipment of classified and unclassified spare parts for aircraft and related equipment; U.S. government and contractor engineering, technical, and logistics support services; and other related elements of logistics and program support.	$228 million

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CHAPTER 10: HONG KONG

Abstract

Under the influence of China's central government, Hong Kong has installed General Secretary of the Chinese Communist Party (CCP) Xi Jinping's view of "holistic" national security, weakening the city's once vibrant institutions, civil society, and business environment. Hong Kong has experienced a serious erosion in its autonomy from the Mainland, although the manifestation of this erosion to date has been far more prominent in civil rights compared with the business environment. Hong Kong's new national security legislation, often called the Article 23 Ordinance, introduces new and ambiguous offenses that target all remnants of resistance to Beijing's control over the city's political, religious, and civil society organizations. The continued implementation of the mainland National Security Law (NSL) and the imposition of the Article 23 Ordinance, which has already been invoked to make new arrests, have diminished the former distinctiveness of Hong Kong. The vaguely defined offenses in both national security laws create an atmosphere of fear and uncertainty, intended to coerce Hong Kongers to self-censor or face legal repercussions. Beijing's heavy-handed control over the city has led many Hong Kongers, including activists, families, and business professionals, to leave. Consequently, Hong Kong's status as an international business hub has deteriorated, and its economy has lost significant ground since the passage of the NSL in 2020. The seven million residents of Hong Kong continue to enjoy greater freedoms than those living on the Mainland—including a freely convertible currency and comparatively uncensored internet and media—but only so far as they refrain from violating the CCP's broad and opaque conceptions of political dissent. Although notable pockets of society, including the business community, remain sanguine about Hong Kong's status as a regional financial and trade hub, that status was based on a set of freedoms and the rule of law, which Beijing is actively eroding.

Key Findings

- Imposition of the Article 23 Ordinance further equips Hong Kong's government with legal tools to oppress any vestiges of dissent. Hong Kong's robust civil society, which once set it apart from the Mainland, is being eroded and replaced with a society where individuals, religious organizations, and the press must censor themselves or face possible criminal prosecution for activities that were previously protected by law.
- The rule of law in Hong Kong is under threat. Hong Kong's courts no longer maintain clear independence from the government and are being weaponized as the Article 23 Ordinance is

enforced. The court's verdict in more than a dozen of the Hong Kong 47 cases to convict pro-democracy advocates for offenses that allegedly threatened national security, and subsequent resignations by international jurists in protest, illustrate the degradation of the city's judicial integrity.

- Imposition of the Article 23 Ordinance introduces uncertainty for businesses in Hong Kong. Firms and business professionals could potentially face criminal conviction for conducting normal business activity, including research, international collaboration, and due diligence.
- Hong Kong's repressive new security regime not only threatens Hong Kong residents but also can endanger foreign business professionals in Hong Kong and be wielded as a cudgel to repress the overseas activist community, including in the United States, through its extraterritorial application.
- Chinese nationals and businesses have flooded Hong Kong's labor force and economy, advancing Beijing's ambitions to integrate Hong Kong along with Macau and nine nearby mainland Chinese cities into the Greater Bay Area (GBA) economic hub.
- Hong Kong has become a key transshipment node in a global network that assists Russia and other adversaries in evading sanctions and circumventing export controls. This diminishes the efficacy of U.S. and allied government efforts to advance important national security interests, and it exposes Western investors, financial institutions, and firms to financial and reputational risks when they do business in Hong Kong.

Recommendations

The Commission recommends:

- Congress require the Administration to produce a determination whether reasonable grounds exist for concluding that the Hong Kong Special Administrative Region should be designated as a Primary Money Laundering Concern (PMLC) jurisdiction under Section 311 of the Patriot Act due to its growing role as the central sanctions evasion hub and transshipment center for illicit finance and technology to Russia, Iran, and North Korea.
- Congress direct the U.S. Department of the Treasury, in coordination with the U.S. Departments of State and Commerce, to provide the relevant congressional committees a report assessing the ability of U.S. and foreign financial institutions operating in Hong Kong to identify and prevent transactions that facilitate the transfer of products, technology, and money to Russia, Iran, and other sanctioned countries and entities in violation of U.S. export controls, financial sanctions, and related rules. The report should:
  - Evaluate the extent of Hong Kong's role in facilitating the transfer of products and technologies to Russia, Iran, other adversary countries, and the Mainland, which are prohibited by export controls from being transferred to such countries;

- Evaluate Hong Kong's role in facilitating trade and financial transactions that violate U.S. sanctions on Russia, Iran, and other countries and entities subject to U.S. financial sanctions;
- Examine whether Hong Kong's National Security Law has limited the ability of financial institutions to adhere to global standards for anti-money laundering and know-your-customer procedures; and
- Describe the level of cooperation between Hong Kong and U.S. authorities in enforcing export controls and sanctions regimes.

Introduction

The people of Hong Kong experienced another dire year under the control of China's central government. What was once a thriving civil society with independent institutions and an international business hub continues its transformation into another mainland-style city. Beijing continues to accelerate its takeover of the city. Despite promising Hong Kong a "high degree of autonomy" in the Sino-British Joint Declaration through 2047, under General Secretary Xi's leadership Beijing has accelerated its erosion of that commitment.[1] China has betrayed its promise of "one country, two systems" by rolling back longstanding policies, basic freedoms, and privileges that made the city distinct from the Mainland.[2] Through the imposition of the Article 23 Ordinance, officially titled the Safeguarding National Security Ordinance,* the Hong Kong government has sent another clear warning signal to activists in Hong Kong and dissidents outside of the city that any behavior it deems a threat to national security is a violation of criminal law. Along with the 2020 NSL passed by China's central government, the Article 23 Ordinance has again moved the red lines on what the government will permit, and it has expanded the definitions of criminal offenses in ways that pose an extraterritorial threat. Hong Kong's legal system provides increasingly fewer protections for civil liberties—like freedoms of expression, assembly, and religion—that were once the bedrock of the city and distinguished it from the Mainland. The intervention into Hong Kong's elections, judiciary, and education systems and attacks on its civil society illustrate the lengths to which Beijing will go to tighten its control over the city.

Hong Kong's businesses also face a vague and contradictory legal environment under the Article 23 Ordinance, which may severely inhibit the ability of firms to conduct normal business operations, including pursuing needed research and due diligence. At the same time, Hong Kong's broader economy faces headwinds, including slow economic growth and a sluggish market, while a steady flight of multinational firms scale back their operations or leave the city altogether. In their place, Hong Kong government initiatives encouraged by the Mainland have infused Hong Kong with an influx of mainland businesses and workers and enhanced links between

*The Safeguarding National Security Ordinance is the fulfillment of requirements under Article 23 of Hong Kong's Basic Law, essentially its mini constitution. In the vernacular, the Article 23 Ordinance is sometimes just referred to as Article 23, which was the provision of the Basic Law that required Hong Kong to pass national security rules. Ricardo Barrios, "Hong Kong Adopts New National Security Ordinance: Article 23," *Congressional Research Service* CRS IN12341, April 1, 2024; Greg Torode and Jessie Pang, "Article 23: What You Need to Know about Hong Kong's New National Security Laws," *Reuters*, March 19, 2024.

Hong Kong and the surrounding Greater Bay Area (GBA).* Hong Kong's dwindling international status is also reflected in its slipping role as a shipping hub, which continues to decline compared to peer Asian neighbors and increasingly serves Beijing's goals in sanctions evasion. This chapter details Hong Kong's recent political and economic developments, attacks on its rule of law and basic freedoms, and the implications for the United States. It is based on consultations with U.S. and foreign nongovernmental experts as well as open source research and analysis.

Hong Kong's Safeguarding National Security Ordinance (Article 23 Ordinance)

Overview of the Article 23 Ordinance

Hong Kong's Article 23 legislation went into effect on March 23, 2024, and introduced severe measures that will further target dissidents, undermine civil liberties, and minimize Hong Kong's distinctiveness from the Mainland.[3] While already eroded by the 2020 NSL, the vestiges of Hong Kong's independent institutions and open business environment deteriorate even further under the Article 23 Ordinance.[4] The Article 23 Ordinance also threatens to further repress dissidents overseas, and it creates more uncertainty among civil society and the business community regarding their future in Hong Kong.[5]

Background

Under Article 23 of Hong Kong's Basic Law, the Hong Kong government is required to introduce legislation to "prohibit any act of treason, secession, sedition, subversion against the Central People's Government, or theft of state secrets, to prohibit foreign political organizations or bodies from conducting political activities in the Region, and to prohibit political organizations or bodies of the Region from establishing ties with foreign political organizations or bodies."[6] The Hong Kong government first tried to introduce Article 23 legislation in 2003. At that time, Hong Kong, only a few years removed from British rule, still had vocal independent institutions and civil society.[7] That attempt to introduce a local national security law was met by 500,000 protestors, which ultimately led the government to abandon its proposal.[8]

In 2020, the central government in Beijing introduced the NSL,† directly applying it to Hong Kong and subjecting Hong Kong—for the first time since the handover from British rule—to legal limitations on political activity similar to the Mainland.[9] Four years of NSL implementation has significantly narrowed political freedom in Hong Kong, transforming Hong Kong's civil society, gutting electoral opposition, and paving the way for passing the Article 23 Ordinance in Hong Kong's own law.[10]

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*The cities in the GBA are linked by transportation networks and common business policies. China considers the cities within the GBA to be industry leaders in high technology, advanced manufacturing, logistics, and financial services. Guilherme Campos, "Greater Bay Area–China's Booming Southern Mega Region," *China Briefing*.

†For more on the mainland National Security Law imposed in 2020, see U.S.-China Economic and Security Review Commission, Chapter 5, "Hong Kong," in 2*020 Annual Report to Congress*, December 2020.

The NSL required Article 23 legislation to be completed as soon as possible.[11] On January 30, 2024, Hong Kong's government began a consultation period for the Article 23 Ordinance that lasted one month.[12] The government claims that 99 percent of submissions during this period were supportive of the proposed legislation, and "anti-China" foreign groups were attempting to smear the legislation and provoke discontent.[13] During the National People's Congress in March in Beijing, Hong Kong officials were instructed by Politburo member and head of the Central Leading Group on Hong Kong and Macau Ding Xuexiang to pass the legislation as quickly as possible.[14] Lawmakers moved to pass the legislation within two weeks.[15]

New Offenses under the Article 23 Ordinance

The Article 23 Ordinance introduces a series of new offenses that undermine the civil and legal rights of individuals, businesses, journalists, civil society groups, and international organizations in Hong Kong and overseas, reflecting the wide reach of Xi's vision for "holistic" national security.*[16] These include:

- *Broadly defining acts of seditious intention:* Expanding upon the NSL, the Article 23 Ordinance defines a "seditious intention" offense to include intentionally causing "hatred or enmity amongst different classes of residents of the [Hong Kong Special Administrative Region] or amongst residents of different regions of China."[17] Maximum penalties for having "seditious publication[s]" were also increased to three years.[18]
- *New crimes to prevent coordinated activity:* Concealment of others' activities deemed treasonous under the national security law, also referred to as misprision of treason, was codified as a crime in the Article 23 Ordinance.[19] Failure to report someone who is planning to commit treason could result in up to 14 years in jail.[20]
- *Expanding the definition of espionage to erode free speech and association:* The Article 23 Ordinance expands the definition of espionage to include "collusion with 'external forces' to publish false or misleading statements" with intent to endanger national security.†[21] External forces could refer to any foreign government, agency, individual, political party, or international organization.[22] Under this definition, "collusion with external

*On April 15, 2014, General Secretary Xi Jinping introduced his concept of "holistic" national security. The concept emphasizes "mega security" encompassed in 20 different sectors, including political, military, economic, cultural, and data security, among others. The Government of Hong Kong translates the Chinese term "总体" as "holistic," while the Commission translates this as "comprehensive" national security. For more on Xi's comprehensive national security concept, see Chapter 7, "China's New Measures for Control, Mobilization, and Resilience." Government of Hong Kong, *A Holistic Approach to National Security* (总体国家安全观), April 15, 2024. Translation.

†Certain provisions of the National Security Law contain a *mens rea* element that the prohibited act must be performed "with intent to endanger national security" to constitute an offence. In practice, this intent element may not offer much protection to alleged violators given the broad scope of "national security" and that trials will be before judges especially appointed by the Beijing-friendly Hong Kong chief executive to oversee NSL cases. Eric Y.H. Lai, "Implications of Article 23 Legislation on the Future of Hong Kong, *Jamestown Foundation*, March 1, 2024; Safeguarding National Security Ordinance (Hong Kong Special Administrative Region), 2024; The Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region, 2020.

forces" could potentially be applied to a broad variety of conduct that otherwise would generally not be considered criminal or even harmful.[23] For example, this could be applied to a Hong Kong resident who spoke to a foreign journalist, exchanged information with a foreign researcher, or posted on social media a foreign think tank's report critiquing Hong Kong's technology sector.[24]

- *Supporting external "intelligence organizations":* The Article 23 Ordinance expands the definition of espionage to include the new offense of "participating in or supporting external intelligence organizations or accepting advantages from them."[25] Under the Article 23 Ordinance, an "external intelligence organization" may include "an organization established by an external force."[26] The ambiguity of the term leaves China's National Administration for the Protection of State Secrets to determine whether an organization is considered a foreign intelligence organization.[27] Potentially, a foreign nongovernmental organization (NGO) might be deemed an intelligence organization.[28]
- *Broadening the scope of "external interference" to cover routine political activity:* The Article 23 Ordinance introduces "external interference" as a new criminal offense and defines it as the intent, in collaboration with an external force, to bring about an interference effect, which refers to any attempts to influence mainland or Hong Kong government officials, election outcomes, judicial procedures, or the Hong Kong-Mainland relationship.[29] This criminalizes a broad range of political activity.
- *"Endangering national security" through an electronic system or computer:* This new offense expands the broad definition of an "offense endangering national security" to include activities related to computers or other electronic systems.[30] This vague definition could potentially encompass Hong Kongers using a foreign virtual private network or electronic communication apps, for instance, to share content that allegedly endangers national security.[31]
- *Expanding the scope of state secrets:* The Article 23 Ordinance imports Beijing's vague definition of state secrets, which can be broadly applied to information relating to a variety of sectors, like scientific research, the external affairs of Hong Kong, and economic development.[32] According to analysis by the China Strategic Risks Institute, a global policy think tank, the arbitrarily defined scope of state secrets could apply to "normal business activities, including auditing, economic and financial analyses, and due diligence."[33]

The first conviction under the Article 23 Ordinance came in September 2024, when a Hong Kong man pled guilty to sedition for wearing a shirt with the slogan "Liberate Hong Kong; revolution of our times."[34]

Hong Kong's Political and Judicial Systems Subjugated by Authoritarian Overreach

Blurring Political Lines between Beijing and Hong Kong's Electoral Systems

China promised that Hong Kong could maintain its distinctiveness for at least 50 years under the model of "one country, two systems" after returning to mainland control.[35] Contrary to these commitments, the Chinese government's overhaul and politicization of Hong Kong's electoral system has weakened its legitimacy, resulting in a significant decline in political participation.[36] In 2023, Hong Kong reduced the number of directly elected district council seats by 80 percent* and implemented new rules requiring candidates to prove their patriotism and be screened by government committees, mostly composed of pro-Beijing appointees, in order to secure nominations.[37] Hong Kong's district council elections in December 2023 reflected the government's changes, which resulted in low turnout and the arrests of members of one of the only pro-democracy parties in the city.[38] Only 27.5 percent of Hong Kong voters participated in the district council elections, marking the lowest turnout in these polls since 1997 when Beijing took control of the city.†[39] Despite the record low turnout, Hong Kong Chief Executive John Lee Ka-chiu claimed the elections demonstrated voters' support for the process and referred to previous district councils as "destructive" before the change in rules.[40] Members of the League of Social Democrats (LSD), one of Hong Kong's only remaining pro-democracy parties, were also arrested ahead of the December elections for their plans to stage a protest to the electoral rule changes.[41] Hong Kong police arrested three LSD members for inciting others to disrupt or intervene in the district council elections.[42] Thomas Kellogg, executive director of Georgetown University's Center for Asian Law, emphasizes the dire state of Hong Kong's political environment, saying "pro-democratic political activity in Hong Kong is over and likely will remain off-limits for years to come."[43] Others, like former U.S. Consul General in Hong Kong and Macau Hanscom Smith, argue that a delineation can still be made between the Mainland and Hong Kong. Mr. Smith suggests that "despite an erosion in autonomy, [Hong Kong] is not the Mainland."[44] A May 2024 report by the Center for Strategic and International Studies suggests more broadly that some vestiges of autonomy remain in Hong Kong.[45] The report also notes that while Hong Kong is "qualitatively different than in other mainland Chinese jurisdictions," the overall trend is "clearly in the direction of further erosion of autonomy across nearly all domains—the legal and political system and civil society, as well as the climate for companies and investors."[46]

*As of 2024, only 88 out of 470 district council seats are directly elected. Nectar Gan, "Hong Kong Voters Turn Their Backs on 'Patriots Only' Election with Record Low Turnout," *CNN*, December 11, 2023.

†Following months of protest in 2019, there was a historic turnout of 71 percent in Hong Kong's elections. Nectar Gan, "Hong Kong Voters Turn Their Backs on 'Patriots Only' Election with Record Low Turnout," *CNN*, December 11, 2023.

Hong Kong's Judicial Independence Undermined

Judicial independence in Hong Kong continues to be undermined by government overreach. Prolonged national security cases, such as the trials of Jimmy Lai and the Hong Kong 47,* illustrate the lack of judicial integrity in Hong Kong's courts, where trial hearings can be delayed by months and bail can be arbitrarily denied.[47] Procedural delays in the legal process meant that many of the Hong Kong 47 were held for over two years awaiting trial.[48] On May 30, 2024, a Hong Kong court finally announced its verdict in 16 cases of the Hong Kong 47 trial, the landmark national security case that began in February 2023, bringing the total time since their initial arrest to nearly three and a half years.[49] The court found 14 of the defendants guilty and acquitted two—although the prosecution has announced plans to appeal the acquittals.†[50] Many of the 47 advocates have been detained for more than three years due to severe bail thresholds, during which time 31 of the accused pled guilty.[51] The 16 that pled not guilty could face up to life in prison.[52] Jean-Pierre Cabestan, senior research fellow at the Asia Centre, suggests that the major message from the trials to Hong Kong's society is "either you toe the line, you support the Communist party, or you are excluded from political life."[53]

The Article 23 Ordinance further erodes the legal rights of defendants, allowing detention for up to 16 days (previously two days) without charges, restricting access to certain lawyers, and tightening national security trials, bail, and parole.[54] More specifically, in the first 48 hours after someone is arrested, they can be blocked from consulting any lawyer and then denied a chosen lawyer while they remain in detention.[55] In addition, the Article 23 Ordinance also grants discretionary powers to the chief executive to issue binding certificates to courts and make subsidiary legislation at any time if it is related to "safeguarding national security."[56] Due to the broad scope of the Article 23 Ordinance offenses, Hong Kong's Beijing-appointed chief executive has ample opportunity to introduce arbitrary laws.[57]

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*Known as the "Hong Kong 47," the group comprises activists, politicians, legislators, and civil society leaders who were opposed to the central government's overreach into Hong Kong's electoral process. They were arrested and accused of holding primary elections in 2021, a historically common event ahead of elections, in order to help elect candidates who could challenge pro-Beijing candidates in the main election. Helen Davidson and Verna Yu, "Hong Kong 47: Trial of Dozens in Pro-Democracy Movement Set to Begin under National Security Laws," *Guardian*, February 4, 2023.

†Prior to the NSL, the trial would have been before a jury, not judges picked by the Hong Kong chief executive, and prosecutors would not have been able to appeal an acquittal. The NSL allowed national security cases to be tried by a panel of three national security judges instead of a jury. The NSL also directed the chief executive to appoint certain judges to handle national security cases. In 2023, the Hong Kong Department of Justice proposed an amendment that would break from prior practice, allowing prosecutors to appeal an acquittal under the NSL by High Court judges on the basis of legal error. The amendment was ultimately adopted. These new judicial processes were implemented in the case of the Hong Kong 47. Jessie Yeung, Nectar Gan, and Chris Lau, "Hong Kong Democracy Leaders Convicted in Most Significant Verdicts since Beijing's National Security Crackdown," *CNN*, May 30, 2024; China Strategic Risks Institute, "Analysis of the Business and Legal Risks Associated with the HKSAR Safeguarding National Security Ordinance (Article 23)," April 2024, 3, 7; Hong Kong Special Administrative Region Criminal Procedure (Amendment) Ordinance 2023, July 14, 2023; Lydia Wong, Thomas E. Kellogg, and Eric Hanho Lai, "Hong Kong's National Security Law and the Right to a Fair Trial: A GCAL Briefing Paper," *Georgetown Law Center for Asian Law*, June 28, 2021; Jeffie Lam, "Hong Kong Prosecutors Will be Allowed to Appeal against Acquittals in Some National Security Cases in Court of First Instance under Proposed Change," *South China Morning Post*, April 21, 2023. The Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region, 2020.

The Hong Kong government has also been slow to fill open judicial positions within the Hong Kong courts system, further prolonging some trials and undermining the integrity of the courts.[58] Consequently, the number of people held in Hong Kong jails continues to increase and their futures remain unclear given the backlog in cases being heard.*[59] Alvin Cheung with the U.S.-Asia Law Institute explains that "this shortage is plainly appalling in terms of how it prolongs legal limbo for defendants."[60] Amid the lack of appointments, the number of filled judicial positions in the first half of 2024 hovered at just over 160 out of 211 total positions, including national security judges, with the High Court having a higher vacancy rate than other Hong Kong courts.[61] Despite the shortage, no new judges have been appointed to the High Court since 2021.[62] Underscoring the impact of the NSL and increasing role of Beijing in the process, Chief Executive Lee only appointed three out of the six potential High Court judges nominated by the Judicial Officers Recommendation Commission (JORC) in 2021.[63] Of the other three put forward by the JORC, one failed to pass a national security background check and another candidate backed out of the process over concerns around the impact of the 2020 NSL on Hong Kong's legal landscape.[64] Additionally, the JORC has not made any new recommendations for full-time judges in the last three years.[65]

Legal professionals have been hesitant to risk reputational and career damage by serving as a judge on the Hong Kong courts.[66] In June 2024, after the prior month's verdict convicting 14 Hong Kong activists and politicians of national security violations, three non-permanent foreign judges announced their resignations from positions on Hong Kong's Court of Final Appeal.[67] Jonathan Sumption, one of the former judges and a British citizen, published an opinion piece in the *Financial Times* identifying a "growing malaise in the Hong Kong judiciary" and claiming that Hong Kong "is slowly becoming a totalitarian state."[68] An additional two foreign non-permanent judges have declined to renew their appointments to the Court of Final Appeal as well this year.[69]

To deter civil servants and judges from helping implement Hong Kong's national security laws, some U.S. lawmakers have introduced legislation calling for sanctions on members of the Hong Kong legal system involved in enforcement of the NSL.[70] Some Hong Kong dissidents and activists applaud these sanctions, arguing that they stand to have a deterrent effect on judges and prosecutors in the city.[71] Sanctions on these individuals would prevent them from interacting with a range of financial institutions and severely constrict the ability of these individuals to make international payments.[72] Former Hong Kong Chief Executive Carrie Lam indicated that U.S.-led sanctions placed on her for her role in crackdowns on democratic protests have already caused personal financial hardships.[73] As evidence of the sensitivity of individual sanctions, the Chinese and Hong Kong governments have issued strongly worded objections whenever sanctions have been imposed, including in 2020 and 2021.[74]

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*As of September 2023, the number of people held in jail has reached a ten-year high, causing one Hong Kong detention center to operate at around 104 percent capacity. Siyan Cheung, "Hong Kong Detention Center Overflowing as Thousands Serve Time for Protests," *Radio Free Asia*, September 6, 2023.

Hong Kong's Extraterritorial Application of the National Security Law

The Hong Kong government continues to extend its reach by adopting an extraterritorial approach to enforcement of its national security laws. Since July 2023, Hong Kong's National Security Police have placed bounties on 13 overseas pro-democracy activists, questioned their family members, and attempted to intimidate them.[75] These Hong Kong activists include: Nathan Law, Elmer Yuen, Dennis Kwok, Kevin Yam, Anna Kwok, Mung Siu-tat, Finn Lau, Ted Hui, Frances Hui, Joey Siu, Jonny Fok, Tony Choi, and Simon Cheng.[76] All of the activists targeted live outside of Hong Kong as dissidents in the United States, Australia, and the United Kingdom (UK).[77] Hong Kong police have accused these activists of "collusion with foreign country or external elements," "incitement to secession," and "incitement to subversion."[78] The bounties issued by police are worth approximately $128,000 (Hong Kong Dollars [HKD] 1 million) for information that may lead to their arrest; if caught, activists could receive sentences of up to life in prison.*[79] The family members of Hong Kong dissidents are also targeted and harassed for their relatives' pro-democracy work abroad.[80] For instance, the mother of U.S.-based activist Frances Hui was taken to a police station and questioned in January 2024 after authorities issued a bounty for her daughter's arrest.[81] The Article 23 Ordinance also provides a legal basis for requiring financial institutions to deny overseas activists access to their bank accounts.[82]

Draconian Laws Threaten Civil Liberties

Academic Freedom

Four years into implementation of the NSL, academic freedom in Hong Kong has dwindled as educators face pressure to politicize their curriculum and abide by national security requirements, including the Article 23 Ordinance.[83] The Patriotic Education Law† officially took effect on January 1, 2024, and, according to the Hong Kong government, aims to "strengthen patriotic education… [and] inherit and promote the spirit of patriotism."[84] The government also established a new Working Group on Patriotic Education to integrate patriotic education, national security education, and Chinese culture education.[85] Ahead of Hong Kong's National Security Education Day (April 15),‡ primary and secondary school teachers were provided a script to read to students that explains General Secretary Xi's approach to national security and describes the Article 23 Ordinance as creating a "safety barrier" for the city.[86] Teachers

*Unless noted otherwise, this section uses the following exchange rate throughout: $1 = HKD 7.79 as of September 17, 2024.

†The Patriotic Education Law, passed in October 2023, sets requirements for patriotic emphasis in areas of education including ideology and politics, history and culture, constitution and law, and national security. *Reuters*, "China Passes Patriotic Education Law for Children, Families -State Media," October 24, 2023; Government of Hong Kong Special Administrative Region News, *Patriotic Education Law Welcomed*, October 24, 2023.

‡April 15 is also National Security Education Day in mainland China. Arran Hope, "Learning from National Security Education Day," *Jamestown Foundation*, April 26, 2024.

were instructed to host activities for students to teach them how to protect national security in their daily lives.[87] Hong Kong is also sending secondary school principals, teachers, and students to mainland China for "national security education study tour[s]."[88] For example, in April 2024, more than 70 educators and students traveled to Beijing, Shanghai, and Hangzhou, where they visited sites like the Museum of the Communist Party of China and the National Security Education Exhibition Hall.[89]

University leadership also faces pressure to make their institutions conform not to standards of academic freedom but to standards of thought approved by Beijing. According to Carsten Holz, a social science professor at Hong Kong University of Science and Technology, the Hong Kong government expects professors and academic leadership to police their institutions, so "it is no surprise that at least four vice-chancellors of Hong Kong's seven [publicly funded] universities recently resigned."[90] After facing years of criticism by pro-Beijing policymakers and news outlets, vice-chancellor of the Chinese University of Hong Kong (CUHK) Rocky Tuan announced that he would resign from his post effective January 2025.[91] Mr. Tuan has been targeted by pro-Beijing lawmakers and others since 2019 for his support of student protestors.[92] Since then, CUHK has been singled out for the first audit of a university in Hong Kong by the city's Audit Commission, which was described as "a form of harassment" by one CUHK academic.[93] Former CUHK council member Tik Chi-yuen also argued that CUHK was targeted by the Hong Kong legislature, and Tuan's management of the university was scrutinized politically.[94] The university should remain free from political interference, Tik Chi-yuen said.[95]

Hong Kong's schools are also politicizing their curriculum and struggling to maintain enrollment numbers among local students. As enrollment from Hong Kong's local students declines, some Hong Kong institutions are replacing them with mainland and international students.[96] Chief Executive Lee announced in an October 2023 speech that the quota of overseas and mainland students at Hong Kong's public universities was set to increase from 20 percent to 40 percent as a part of the government's push to make the city an "international hub for education and a center for innovation."[97] CUHK, for instance, increased its annual enrollment quota for mainland students from 300 to 400 students for this year.[98] In 2018, mainland students accounted for 50 percent of nonlocal students at Hong Kong's universities, but that number has risen to more than 70 percent in the last six years.*[99] According to Hong Kong's University Grants Committee, at the city's main public universities, there are 14,756 nonlocal undergraduate students, of which 10,358 are from the Mainland.[100] In an effort to attract more international students to Hong Kong, the grants committee is giving nearly $4 million to eight of Hong Kong's top public universities to promote their programs overseas and attract new students.[101]

As a result of the emigration wave and declining birthrates, applications for Hong Kong kindergartens decreased by a third from

*In the 1996–1997 school year, there were just five mainland Chinese enrolled in Hong Kong undergraduate programs. *South China Morning Post*, "Public Universities in Hong Kong Target Foreign Students as Mainland Chinese Numbers among Undergrads Soar," February 11, 2024.

last year's numbers.[102] Vice-chair of the Hong Kong Federation of Education Workers Nancy Lam Chui-ling does not expect the emigration wave to stop and notes in an interview that the application numbers are likely even lower than those that are reported because parents will typically submit multiple applications before choosing a school in which to enroll their child.[103]

Freedom of Press

Despite being enshrined in Hong Kong's Basic Law, freedom of the press* continues to be limited by the imposition of Hong Kong's draconian security laws. The 2020 NSL is used to suppress journalists on claims of combating "subversion," "secession," and "collusion with foreign forces."[104] The ambiguous definitions of these terms in the NSL allow it to be applied broadly to independent voices residing inside and outside of Hong Kong.[105] Similar to the NSL, the Article 23 Ordinance is vaguely worded, allowing judges to apply the law arbitrarily.[106] As discussed above, the Article 23 Ordinance introduces new crime categories, including "theft of state secrets," "external interference," and "espionage," which have been weaponized in the Mainland against press freedom.[107] The Article 23 Ordinance also extends the penalty for "sedition" from a maximum of two years to up to ten years in prison.[108] Merely possessing publications, such as old copies of the independent newspaper *Apple Daily*, founded by pro-democracy advocate Jimmy Lai, is also punishable under the new law and can carry a three-year jail term.†[109] In August 2024, two editors from the now shuttered pro-democracy media outlet Stand News were found guilty of sedition.[110] The editors were charged before the imposition of the Article 23 Ordinance under a colonial-era sedition law that has been used in recent years to crack down on press viewed as critical of the Hong Kong government.[111] In an atmosphere of worsening press freedom, the Article 23 Ordinance gives Hong Kong and mainland authorities even greater powers to punish members of the media viewed as supporting pro-democracy activities.

As Hong Kong's press freedom is further repressed, more news outlets and journalists are leaving the city, and others are blocked from even entering. After almost three decades of operating in Hong Kong, and shortly after the Article 23 Ordinance was enacted, Radio Free Asia (RFA), a U.S. government-funded private nonprofit news corporation, closed its bureau in the city and will no longer have full-time personnel in Hong Kong due to concerns with the worsening press freedom landscape.[112] RFA president Bay Fang noted that Hong Kong authorities' reference to RFA as a "foreign force" has raised "serious questions about [RFA's] ability to operate in safety with the enactment of Article 23."[113] Several weeks after RFA's de-

*Hong Kong is ranked 135 out of 180 countries in the Reporters Without Borders (RS) 2024 World Press Freedom Index. As of July 9, 2024, ten journalists are detained in Hong Kong. Reporters Without Borders, "2024 World Press Freedom Index—Journalism under Political Pressure," 2024.

†The crackdown on press deepens the threat to free speech. In 2020, Hong Kong passed a law criminalizing insulting the Chinese national anthem. In July 2024, a man was found guilty of this crime from an incident in 2023 where he covered his ears during the anthem at a sports match and instead sang "Do You Hear the People Sing" from the musical *Les Miserables*. Hillary Leung, "Hong Kong Man Found Guilty of Insulting Chinese Anthem at Volleyball Game," *Hong Kong Free Press*, July 22, 2024.

parture, on April 10, 2024, a Reporters Without Borders (RSF) representative was detained and deported out of Hong Kong because of plans to meet with journalists and monitor a hearing in Jimmy Lai's national security trial.[114] In a statement about the incident, RSF described it as "a new decline in the already poor press freedom climate in the territory."[115] In April 2024, the Hong Kong-based *South China Morning Post* (*SCMP*), which is owned by Chinese technology giant Alibaba, joined its mainland counterparts in withdrawing its membership from the Society of Publishers in Asia (SOPA) and limited its submissions for the society's regional journalism awards.[116] Among the *SCMP*'s finalist SOPA entries this year is an entrant for "excellence in photography."[117] The *SCMP*, like many other Chinese publications, had faced criticism from the Mainland for its investigations and research in the Mainland, including investigations critical of the Chinese government.[118]

The *Wall Street Journal* also announced it would move its regional headquarters to Singapore, and it laid off editors and reporters at its Hong Kong bureau in May 2024.[119] Selina Cheng, one of the remaining staff reporters after the *Wall Street Journal*'s initial round of layoffs, claims the *Wall Street Journal* reversed course and fired her in July after she was elected chair of the Hong Kong Journalists Association (HKJA).[120] HKJA advocates for press freedom, including releasing an annual report on the state of freedom of expression in Hong Kong and raising concerns during the Article 23 Ordinance public consultation period.[121] Chinese state media has denigrated HKJA and its members for "badmouthing" China.[122] This incident highlights the pressures on foreign media to self-censor in line with the CCP's requirements on media, and it calls into question claims that foreign businesses have been unaffected by the new atmosphere following the passage of the NSL and Article 23 Ordinance.

Growth of the Surveillance State in Hong Kong

As Hong Kong's governance continues to converge with the Mainland, the city is increasingly adopting the methods of a surveillance state. In February 2024, the Hong Kong government announced plans to install 2,000* more cameras across the city in partnership with the Hong Kong police, raising privacy concerns among the public about how the technology may be used to surveil Hong Kongers.[123] Hong Kong Police Commissioner Raymond Siu Chak-yee claimed the cameras would be used to combat crimes and ensure residents' safety, but he also noted that the police force would not rule out using facial recognition technology in its surveillance system.[124] In addition to the new cameras, last year Hong Kong's police force requested funding to upgrade bodycams and related technologies by building a new 5G system.[125] While police bodycams have garnered support from civil

*The government of Hong Kong does not maintain a count of the number of public surveillance cameras deployed in the city by various government agencies, although the police force claims that these 2,000 cameras are the total amount of cameras they will have deployed. Estimates from Comparitech put the total number of CCTV cameras in Hong Kong at just below 55,000. Hong Kong Police Force, *Territory-Wide CCTV Installation Scheme*; Irene Chan, "Hong Kong to Install 2,000 More CCTV Cameras in 2024, Top Official Says Total Number in City 'Relatively Small,'" *Hong Kong Free Press*, January 19, 2024; Paul Bischoff, "Surveillance Camera Statistics: Which Are the Most Surveilled Cities?" *Comparitech*, May 23, 2023.

Growth of the Surveillance State in Hong Kong—*Continued*

society under certain conditions in free countries like the United States, against an increasingly authoritarian trend in Hong Kong, this effort raised concerns that Hong Kong's digital surveillance network may become more like China's facial recognition system Skynet, which is used to squash political opposition.[126] Executive Director of the Japan Hong Kong Democracy Alliance Alric Lee notes that the combination of new surveillance cameras with the "suite of new 'national security' offenses" in the Article 23 Ordinance could enable Hong Kong's police to monitor people remotely.[127] Mr. Lee further explains that "used in conjunction with the Article 23 legislation, [surveillance cameras] could become a new tool for prosecutions."[128] Additionally, the Hong Kong police budget for fiscal year 2024–2025 will reach $3.6 billion (HKD 27.8 billion), up 9.2 percent over the prior year.[129] The budget includes a 16.7 percent increase for "rewards and special services" that will cover bounties and payments to informers.[130]

Freedom of Assembly and Association

Freedoms of assembly and association face further assault in Hong Kong this year. Under the Article 23 Ordinance, exercising freedoms of assembly and association can be criminalized. Peaceful civil society activism can be subject to heavy-handed penalties, including long prison sentences.[131] Protests in 2019 involved occupying roads and stalling traffic, which under the new law could result in up to 20-year prison sentences for activities that "weaken" public transportation, infrastructure, or offices.[132] The Article 23 Ordinance may also place constraints on civil society organizations by criminalizing "external interference," including "improper means" to collaborate with external political organizations or international organizations that are seen as "bring[ing] about an interference effect."[133] In practice, this could criminalize actions such as criticizing the Hong Kong government's human rights record or calling on foreign governments to hold the Hong Kong government accountable for protecting human rights.[134] Additionally, the Article 23 Ordinance imposes severe sentences for peaceful civil society activities, such as up to a 14-year prison sentence and a maximum fine of $130,000 for managing a prohibited organization or up to ten years in prison and a fine of $32,000 for participating in a meeting with a banned organization.[135] Amnesty International's China Director Sarah Brooks explains that this legislation "could lead to the prosecution of activists for their exchanges with foreign actors, framed as 'endangering national security.'"[136]

Hong Kong police conducted their first arrests under the Article 23 Ordinance in May 2024 for alleged acts of "seditious intent" to incite people to unlawfully assemble on a "sensitive date."[137] One of the individuals arrested, Chow Hang-tung, was already serving a more than 30-month jail sentence for charges of "unauthorized assembly" for organizing a vigil to commemorate the Tiananmen Square massacre.[138] According to several news reports, her most recent arrest in May 2024 was linked to a Facebook group page ti-

tled "Chow Hang-tung Club" that had asked members to share their experiences with past Tiananmen vigils.[139]

Freedom of Religion

International experts on freedom of religion have also expressed concerns with how the Article 23 Ordinance will impact religious freedom in Hong Kong. While Hong Kong's religious communities do not yet face the same degree of persecution as those in the Mainland, religious leaders face pressure to promote Beijing's priorities, including the sinicization of religion.[140] Those who do not comply face legal consequences. Cardinal Joseph Zen, a senior Roman Catholic cleric in Hong Kong and a critic of the CCP and outspoken advocate for human rights, was arrested and fined in 2022 for failing to register a humanitarian fund that provided financial aid to those arrested in the 2019 pro-democracy protests.[141] Then United States Commission on International Religious Freedom* Commissioner Frank R. Wolf cited this as another example of how Hong Kong is "devolving into an increasingly repressive society where no one resisting government tyranny is safe, including religious leaders and communities."[142] A January 2024 report by the Committee for Freedom in Hong Kong Foundation describes the deterioration of religious freedom in Hong Kong and "warning signs of what's to come," including the intimidation of clergy, self-censorship, and direct attacks on religious practices.[143] Hong Kong's religious leaders are increasingly making visits to the Mainland to meet with religious and other leaders approved by Beijing. For instance, in August 2023, a delegation of Islamic leaders from Hong Kong visited Xinjiang, where they met with the Islamic Association of China and at least one voiced support for the situation there, which includes harsh measures restricting the practice of Islam.[144] During the visit, the chairman of the Islamic Union of Hong Kong contributed to Party propaganda in an interview with Chinese state media by claiming that his "compatriots living in Xinjiang are very happy and joyful, fully enjoying religious freedom and are well-respected."[145] In April 2024, Catholic Cardinal Stephen Chow visited the Mainland for the second time since Beijing and the Vatican jointly appointed him a bishop of Hong Kong in 2020.†[146] During his visit, he met with dioceses in Guangzhou and Shantou—cities in Southern China in fairly close proximity to Hong Kong—which both have bishops approved by Beijing and the Vatican.[147] Cardinal Chow's remarks during his engagements reportedly emphasized respect for different customs and cultures.[148] Comparing the church in Guangdong to the church in Vietnam, Cardinal Chow even noted that both churches have remained under communist rule for many years and are functioning well.[149]

In March 2024, more than a dozen activists and religious freedom experts expressed "profound and grave concerns" about the effects

*The United States Commission on International Religious Freedom stated in its *2024 Annual Report* that increased political pressure after the imposition of the NSL has led to self-censorship among religious leaders in Hong Kong. United States Commission on International Religious Freedom, *2024 Annual Report*, May 2024, 23.

†In 2018, China signed an agreement with the Vatican to allow Beijing a role in the appointment of Catholic bishops. Aleteia, "Cardinal Stephen Chow, a Bridge between Beijing and Rome," September 29, 2023; Jason Horowitz and Ian Johnson, "China and Vatican Reach Deal on Appointment of Bishops," *New York Times*, September 22, 2018.

of the Article 23 Ordinance, specifically how it will impact the Sacrament of Penance, also known as Confession.[150] According to Hong Kong's Secretary for Justice Paul Lam Ting-kwok, under the Article 23 Ordinance, a person can receive up to 14 years in prison for failing to disclose the commission of treason by others.[151] This means that under the law, a priest could be forced to share what has been disclosed to them during Confession, a direct violation of the Universal Declaration of Human Rights.[152] As the statement made by a group of advocacy organizations notes, the Article 23 Ordinance has "grave implications for the confidentiality of Confession in the Catholic Church and other Christian traditions."[153]

Economics and Trade

Beijing's influence over Hong Kong's economic, trade, and financial sectors has intensified. The Hong Kong government's implementation of the Article 23 Ordinance has called into question many of the distinctive features that allowed Hong Kong to flourish as a regional business hub. Under the provisions of the Article 23 Ordinance, foreign businesses in Hong Kong could be severely limited in routine business activities such as accessing data, contacting overseas counterparts, and conducting due diligence.[154] Some businesses have begun proactively separating their Hong Kong operations from other global offices or asking staff to use burner phones as a precautionary measure while visiting the city.[155] This is the latest step in Hong Kong's forced integration with the Mainland, as the Hong Kong business environment increasingly resembles other large Chinese cities.[156] Cross-border commerce and migration boost these ties, as Hong Kong is now a central node in China's Greater Bay Area (GBA), an initiative by China to combine Hong Kong with surrounding Chinese cities to form a single economic and business hub.[157] Faced with Hong Kong's dwindling international stature, slumping markets, and constrictive legal environment, some U.S. firms and other multinationals continue to depart the city, while those that remain face an uncertain business environment.[158] Meanwhile, Hong Kong aids China in utilizing Hong Kong's port to evade sanctions and serves as a key node in a transshipment network of illicit goods to Russia, while the Hong Kong Economics and Trade Offices act as a conduit of mainland interests.[159]

Hong Kong Economy, Markets Remain Sluggish

Hong Kong's economy has been sluggish in recent years as it emerged from a period of social unrest and COVID-19 lockdowns, which contributed to the city's contracting gross domestic product (GDP) in three of the four years from 2019 to 2022.[160] Natixis estimates that the city's strict COVID-19 measures alone, which lasted into early 2023, cost the city $27 billion in growth.[161] Hong Kong experienced weak cumulative GDP growth of only 5 percent over the five years from 2019 to 2023.*[162] In contrast, the five-year period from 2014 to 2018 saw GDP grow over 24 percent.[163] Although the Hong Kong economy grew moderately in 2023 and the first half of 2024, posting growth rates of 3.2 percent and 3.0 percent, respec-

*Hong Kong's real GDP contracted during this time period. World Bank, "GDP (Constant 2015 US$)–Hong Kong SAR, China."

tively, compared with the same periods in the prior year, weakness persists in some segments.[164] Youth labor force participation rates fell from 40 percent in 2018 to 30 percent in 2023, while young people face uncertainty about their futures in Hong Kong.[165] (For more on youth unemployment in China, see Chapter 1, "Economics and Trade (Year in Review).") Businesses are not flocking to Hong Kong as they once were. While Hong Kong attracted 497 foreign companies in 2019, it drew in only 255 overseas companies in 2023.[166] Meanwhile, regional competitor Singapore, which once had a GDP per capita equal to Hong Kong's in the early 2000s, surpassed Hong Kong's GDP in real terms in 2016 and now has a GDP per capita about 70 percent higher than Hong Kong's as of 2023.[167]

Amid its slowing economy, Hong Kong faces a budget shortfall of $13 billion (HKD 101.6 billion) for the 2023–2024 fiscal year, nearly double the government's initial projections.[168] This is the second year in a row the Hong Kong government is facing a sizeable deficit.[169] Despite this shortfall, the Department of Finance continues to use fiscal policy and subsidies to try to stimulate demand, particularly in the housing market.[170] There has been a steady rise in unsold housing in Hong Kong, an issue that emerged in part due to a wave of departures from Hong Kong following the introduction of national security legislation.*[171] Compared with pre-COVID, Hong Kong's labor force was 4 percent lower at the end of 2023, and the number of foreign firms had declined by 5.2 percent as of mid-2023.[172] As of June 2024, 150,400 Hong Kongers, or about 2 percent of the population, had left the city for the UK alone under the British National (Overseas) visa scheme.†[173] Data from Jones Lang LaSalle now show that residential units available in the primary market increased 6 percent to 91,300 units in the fourth quarter of 2023.[174] This is a 74 percent increase in empty Hong Kong apartments since 2020.[175] As of the end of 2023, Hong Kong housing prices were down 20 percent from their 2021 peak, with financial services company UBS projecting another 10 percent decline in 2024.[176] Burgeoning difficulty in the housing market poses particular problems for the Hong Kong government, as land sales contribute around one-fifth of its fiscal revenue.[177] In his budget rollout speech, Finance Secretary Paul Chan announced measures to address the housing market slump, including the removal of longstanding real estate restrictions aimed at curbing speculation and preventing property bubbles.[178] In February 2024, Hong Kong eliminated a 7.5 percent stamp tax on second home purchases, a 7.5 percent stamp tax on nonpermanent residents buying property, and a 10–20 percent stamp tax on those selling their homes within two years of purchase.[179] The government also relaxed lending policies and introduced further stimulus to boost housing demand.[180] While the efficacy of these stimulus

*Although Hong Kong's population rose 0.4 percent in 2023, some of the increase was due to mainland Chinese entering Hong Kong on a variety of government schemes to attract new talent. *Reuters*, "Hong Kong's Population Edges up to 7.5 Mln, Second Year of Post-COVID Growth," February 20, 2024.

†Hong Kongers born before the 1997 handover can apply for a British National (Overseas) (BNO) passport, which grants them the ability to move to the UK. For more on the BNO passport scheme and efforts by the Hong Kong government to restrict it, see U.S.-China Economic and Security Review Commission, Chapter 5, Section 3, "Hong Kong," in *2023 Annual Report to Congress*, November 2023, 660–661. Claire Ballentine, "Hong Kongers Fleeing to UK Leave $3.8 Billion Trapped Behind," *Bloomberg*, July 18, 2024.

efforts has yet to be borne out, these efforts also face market impediments, including elevated interest rates in Hong Kong.[181]

China's actions to undermine Hong Kong's autonomy, including the passing of the Article 23 Ordinance, have eroded Hong Kong's status as a global financial center. Hong Kong's Hang Seng Index has plunged under tighter mainland rule, falling below 15,000 on January 22, 2024, marking less than half of its peak of 33,154.1 in January 2018 before the introduction of the Beijing-backed national security legislation.[182] Illustrating the stark economic reality since mainland China assumed control of Hong Kong, the Hang Seng Index in January 2024 declined below 16,365 points, lower than its value on July 1, 1997, the day China took over Hong Kong.[183] During the same time period, Hong Kong's GDP more than doubled from $177 billion to $382 billion, while investors in the S&P 500 saw their stock investments grow more than four times.[184]

The decline of Hong Kong's stock markets in recent years is admittedly difficult to disentangle from their close alignment with mainland markets and Hong Kong's stringent COVID restrictions. Hong Kong's COVID pandemic controls included mandatory testing and quarantines for positive cases and international travelers.*[185] Hong Kong relaxed its strict travel controls in 2022 in attempts to boost economic growth and attract foreign business back to the city, but the economy still contracted that year.[186] In recent years, the close integration between financial markets in Hong Kong and the Mainland has been detrimental due to broader challenges in the Chinese economy. (For more on China's economic challenges, see Chapter 1, "Economics and Trade (Year in Review).") Since China's opening to foreign trade and investment in the late 1970s, Hong Kong's markets have been closely aligned with the Mainland economy as part of China's strategy to attract foreign capital.[187] Mainland Chinese companies by 2023 accounted for 76 percent of the index's market capitalization.[188] Many major firms are dual-listed on both Hong Kong and mainland exchanges.†[189] These dual listings align with Beijing's objective of integrating Hong Kong's markets with the Mainland and are complimented by Beijing's promotion of the Connect programs.‡[190] The first of these, the Stock Connect, linked Hong Kong to mainland stock exchanges beginning in 2014.[191] The program enabled overseas investors to participate in mainland stock and, starting in 2022, exchange-traded fund (ETF) markets via Hong Kong and allowed mainland investors to participate in Hong Kong's market.[192] In 2017, the Bond Connect was introduced, expanding the program to fixed income products.[193] The

*Hong Kong's strict COVID controls were reportedly used as a form of political repression. Business owners with vocal pro-democracy viewpoints claimed their businesses were unfairly targeted for violating COVID safety measures. Emergency lockdowns in 2020 were also extended one day past the anniversary of the June 4, 1989 Tiananmen Square massacre despite low case levels in Hong Kong at that time. Lok-kei Sum, "Hong Kong's 'Yellow' Companies See Persecution in COVID Crackdown," *Al Jazeera*, August 31, 2022; Marc A. Thiessen, "Opinion: China Is Using Covid-19 to Throttle Hong Kong's Pro-Democracy Movement," *Washington Post*, May 21, 2020.

†For more on dual listings on the Hong Kong and Chinese market, see U.S.-China Economic and Security Review Commission, Chapter 5, Section 3, "Hong Kong," in *2023 Annual Report to Congress*, November 2023, 669–670.

‡For more on the Hong Kong-China Swap Connect programs, see U.S.-China Economic and Security Review Commission, Chapter 5, Section 3, "Hong Kong," in *2023 Annual Report to Congress*, November 2023, 668–669.

latest program, Swap Connect, launched in 2023, enables overseas investors to participate in the Mainland's financial derivatives market through interest rate swaps.[194] An announcement in 2024 by the China Securities Regulatory Commission (CSRC) seeks to further broaden the Stock Connect program to include real estate investment trusts and yuan-denominated stocks listed in Hong Kong while expanding access to ETFs between Hong Kong and the Mainland.[195]

Analysts have attributed Hong Kong's market downturn to China's increased control over Hong Kong. Stephen Roach, senior fellow at the Paul Tsai China Center at Yale Law School and former chair of Morgan Stanley Asia, indicates that a major catalyst of Hong Kong's prolonged market slump was the city's political crackdowns of 2019–2020, which "shredded any remaining semblance of local political autonomy. The 50-year transition period to full takeover by the People's Republic of China had been effectively cut in half."[196] Victoria Tin-bor Hui, a political science professor at the University of Notre Dame, also implicates the recent national security measures in Hong Kong's diminished status, saying, "Beijing's ideal scenario is to keep Hong Kong as a financial center without all the freedom. But it seems that you really cannot maintain Hong Kong's international financial standing while stifling its freedom."[197] Analysts estimate that Chinese and Hong Kong markets collectively lost a staggering $6 trillion since 2021.[198] While the top 300 companies in the Shanghai and Shenzhen stock exchanges declined by more than 40 percent from January 2021 to January 2024, shares of Chinese stocks listed in Hong Kong fared even worse, plummeting by over 50 percent during the same period.[199] The Hang Seng Index declined by 44–45 percent as well.[200] This decline has harmed business operations in Hong Kong, including among law firms, which have sold off office space amid a lack of initial public offerings (IPOs), mergers, and acquisitions these firms typically work on.[201] (For more on foreign businesses in Hong Kong, see "Foreign Businesses Limit Activity, Take Protective Steps" in this chapter.)

Hong Kong Nascent Cryptocurrency Sector Faces Mainland Prohibitions

Hong Kong is pushing to become a hub for digital assets and cryptocurrency, viewed as a means to attract both capital and financial firms back to the city.*[202] In 2022, the Hong Kong government formalized a process to license cryptocurrency platforms to operate in Hong Kong.[203] Two crypto exchanges were licensed under a previous voluntary licensing process and hold full permits to operate in Hong Kong.[204] Eleven more firms were "deemed to be licensed" as of June 2024, meaning they can operate while the Hong Kong Securities and Futures Commission performs an ongoing review of their compliance procedures.[205] The city aims to be a "global hub" for the cryptocurrency sector, according to the chief executive of the city's

*For more on Hong Kong's approach to cryptocurrency, see U.S.-China Economic and Security Review Commission, Chapter 5, Section 3, "Hong Kong," in *2023 Annual Report to Congress*, November 2023, 671.

Hong Kong Nascent Cryptocurrency Sector Faces Mainland Prohibitions—*Continued*

financial regulatory agency, the Hong Kong Monetary Authority (HKMA).[206] Previously, the HKMA has reportedly pressured lenders—including HSBC and Standard Chartered—to take on crypto exchanges as clients.[207]

Hong Kong's ambitions to become a global cryptocurrency hub are tempered, however, by mainland restrictions, where trading in cryptocurrency is strictly prohibited.[208] China outlawed cryptocurrency trading and payments in 2013, but it intensified its crackdown on the industry in 2021, targeting domestic mining operations and foreign firms that were providing services to mainland Chinese.[209] Mainland regulators appear to be intent on keeping Hong Kong's burgeoning cryptocurrency ambitions away from mainland users; a June notice from financial regulators in Shenzhen, just north of Hong Kong, offered stern warnings to overseas crypto platforms and Chinese residents, reiterating that cryptocurrency-related activities remain illegal in mainland China.[210] New regulations in Hong Kong require cryptocurrency exchanges licensed in the city to commit to not serving Chinese nationals—not only those trading in China but trading in any region.[211] This regulation was criticized by Legislative Council (LegCo) member Duncan Chiu as "impossible for traditional offshore exchanges to meet" and for having "shaken the confidence of market participants."[212] In light of these restrictions barring Mainlanders from accessing cryptocurrency platforms, an additional 11 crypto firms withdrew their applications to operate in Hong Kong, some of which were originally affiliated with operations in mainland China that departed after the 2021 crackdown.[213] Bybit, a crypto firm headquartered in Dubai and one of the firms that withdrew its application, later announced it would allow Chinese citizens who live outside of the country to trade crypto on its platform.[214]

Beijing in the past has appeared to quietly back Hong Kong's cryptocurrency ambitions, with representatives from the central government's Liaison Office attending several Hong Kong conferences on cryptocurrency in the city.[215] Although the People's Republic of China has not publicly voiced support for Hong Kong's experimentation with cryptocurrency, according to one industry participant, it may view Hong Kong as a way to test the functionality of digital assets in a limited fashion.[216] However, as Beijing still tightly restricts mainland Chinese from trading or using cryptocurrency, Beijing's motives for allowing Hong Kong to play a key role in cryptocurrency networks may also be related to crypto's role in sanctions evasion. Settlements for illicit Russian commodities trade made in cryptocurrency have been routed through Hong Kong.[217] (For more on Hong Kong's role in sanctions evasion and transshipment, see the textbox "Hong Kong Serves as Key Hub for Transshipments and Support to Russia" in this chapter).

The Article 23 Ordinance Continues to Weigh on International Business

Due to the imposition of the Article 23 Ordinance and the broader NSL, U.S. firms operating in Hong Kong are now grappling with a complex and unsettling regulatory environment. Thomas Kellogg, executive director of Georgetown University's Center for Asian Law, cautioned in an interview with *Bloomberg News* that these laws introduced uncertainty for Hong Kong business and the city's status as a financial hub.[218] This includes provisions in the Article 23 Ordinance that could significantly restrict the ability of chambers of commerce, think tanks, and economic analysts to freely discuss and share information.[219] Dennis Kwok, a lawyer and past member of the Hong Kong LegCo, echoed these concerns, emphasizing that the broad language in the Article 23 Ordinance regarding "external forces" and "external interference" could be applied against a wide range of business activity, including "against the normal advocacy, lobbying, academic research and reporting activities of any foreign business headquartered overseas, as well as [against] NGOs that engage with foreign governments."[220] A local barrister warned that the vague definition of state secrets means people risk violating the law by merely commenting on the state of Hong Kong's economy.[221]

The ability of investors to conduct due diligence on Chinese and Hong Kong firms also risks being restricted under the Article 23 Ordinance.[222] The ordinance's strict language on data flows and cooperating with "foreign forces" may block due diligence firms from accessing needed business information and making disclosures regarding Hong Kong and Chinese companies.[223] The Chinese government had already raided the operations of U.S.-based due diligence and consulting firms on the Mainland before expanding the definition of espionage under a parallel legal authority.[224] Legal experts have raised concerns that the rules under the Article 23 Ordinance could impact an existing agreement between China and the United States that allows the U.S. Public Company Accounting Oversight Board (PCAOB) to conduct inspections in Hong Kong of Chinese accounting firms that have audited firms publicly traded in the United States.[225]

Reflecting the unprecedented scope of the Article 23 Ordinance, in September 2024 the U.S. Departments of State, Treasury, Agriculture, Commerce, and Homeland Security jointly released an updated Hong Kong Business Advisory highlighting potential reputational, regulatory, financial, and legal risks to U.S. companies in Hong Kong.*[226] These new risks are a result of the erosion of Hong Kong's autonomy from the Mainland and the criminalization of many activities that were previously considered routine business activities.[227] The advisory also calls out Hong Kong's growing role in sanctions and export control evasion.[228] (For more on Hong Kong's role in sanctions and export control evasion, see "Hong Kong Serves as Key Hub for Transshipments and Support to Russia" in this chapter.)

*This business advisory updated a 2021 Hong Kong Business Advisory jointly issued by the U.S. Departments of State, Treasury, Commerce, and Homeland Security in the wake of the imposition of the NSL. The 2021 business advisory highlighted risks associated with the NSL, data privacy, access to information, and exposure to sanctioned entities or individuals. U.S. Department of State, *Risks and Considerations for Businesses Operating in Hong Kong*, July 16, 2021.

Foreign Businesses Limit Activity, Take Protective Steps

The Article 23 Ordinance poses significant practical challenges for business and legal activity that is routine in a market economy under the rule of law. As an example, after the implementation of the Article 23 Ordinance, which includes restrictions on database access, law firm Latham & Watkins reportedly took measures to safeguard its data from Hong Kong's authorities.[229] The move by Latham & Watkins, the world's second-highest-grossing law firm, is viewed as aligning the firm's Hong Kong data security regulations with those of its operations on the Mainland.[230] Under the new changes reportedly announced in February 2024, Latham & Watkins' Hong Kong-based staff would require specific permission to access international databases.[231] This decision effectively severs unrestricted access for its Hong Kong-based lawyers to international databases in the United States, Europe, and the rest of Asia.[232] Instead, under Hong Kong's increasingly strict data regime, the firm is reportedly combining its Hong Kong database with the Mainland under the umbrella of "Greater China," a segment of Latham & Watkins operations that will be siloed off from the rest of the firm's global research.[233] In an interview with the *Financial Times*, two individuals familiar with Latham & Watkins' decision explained that this action aims to limit data access in the event of a raid by Hong Kong authorities under the NSL.[234] During such a raid, Hong Kong authorities would only be able to access the firm's China and Hong Kong databases.[235] Meanwhile, a wave of U.S.-based firms in the legal sector continues to pull back from Hong Kong, with several citing the city's diminishing role as a major legal market among other challenges; as of August 2024, law firms that have pulled back from or closed their Hong Kong offices include Mayer Brown; Addleshaw Goddard; Winston & Strawn; Orrick, Herrington & Sutcliffe; DLA Piper; Dechert; and Baker Botts.[236] Through May 2024, overall mergers and acquisitions activity in Hong Kong was at its lowest level since 2012, which has contributed to the exodus of law firms, as they earn high fees from this activity.[237] Law firms have also been wary of working on deals involving Chinese state-owned companies because of due diligence or security concerns.[238] The net number of new members joining Hong Kong's Law Society in 2023 declined 83 percent compared with 2020, while new law school graduates have reportedly experienced difficulty securing jobs.[239]

Hong Kong's focus on national security continues to be panned more generally by the U.S. business community in Hong Kong.[240] According to the American Chamber of Commerce (AmCham) in Hong Kong's Business Sentiment Survey 2024, 67 percent of AmCham members identified "reduced rhetoric on national security" as the most effective measure to enhance U.S.-Hong Kong relations, making it the top choice among all survey participants.[241] The same survey, which was conducted prior to the passage of the Article 23 Ordinance, found that 31 percent of recipients felt operations had been negatively impacted by the NSL, mostly indirectly but some through departures of employees, lower staff morale, or extra resources spent on compliance.[242]

Erosion of the Rule of Law: Legal Rulings Target Foreign Firms

Hong Kong's LegCo introduced the Article 23 Ordinance within two months of the effective date of legislation permitting the enforcement of mainland Chinese court rulings in Hong Kong for civil and commercial disputes.*[243] This development underscores concerns about the erosion of Hong Kong's independent legal system, which has long been valued by international businesses.[244] It further exacerbates fears of the diminishing distinction between Beijing's and Hong Kong's legal frameworks, raising apprehensions that Hong Kong's common law tradition firmly grounded in the "rule of law" concept is increasingly being overshadowed by the Mainland's "rule by law" system, which treats law as an instrument of Party control.†[245] The U.S. Department of State's *2023 Investment Climate Statements: Hong Kong* echoes this view, warning that "while Hong Kong's legal system had been traditionally viewed as a bastion of judicial independence, authorities have over the past year continued to place pressure on the judiciary in some cases. Rule of law risks that were formerly limited to mainland China have now increasingly become a potential concern in Hong Kong."[246]

Already, politically charged legal rulings in Hong Kong are weighing on the activities of foreign tech companies. In May 2024, the Hong Kong Court of Appeals sided with the Hong Kong government in ruling that the protest anthem "Glory to Hong Kong" should be removed from digital platforms, including those from U.S.-based firms Alphabet (Google and YouTube), Apple, Meta (Facebook and Instagram), and Spotify.[247] This is the latest push by the Hong Kong government to influence the activity of U.S. digital platforms in the city, inflaming tensions that date back to 2020, when most major U.S. companies announced they would pause processing data requests from the Hong Kong government while they assessed the NSL.[248] Since that announcement, some U.S. firms have resumed processing requests from the Hong Kong government on a case-by-case basis.[249] In the last six months of 2023, Meta received 29 requests from the Hong Kong government to obtain user data, and it answered one.[250] In the first six months of 2023, Google complied with 82 of the Hong Kong government's requests to remove items from their services out of 162 filings, although Google specified that it chose not to remove two YouTube videos and one Google Drive file related to "Glory to Hong Kong."[251] However, under a court order granted in May 2024, some platforms have begun to comply, including YouTube, which promptly blocked access to "Glory to Hong Kong" for its Hong Kong users.[252]

Foreign Firms Continue to Pull Back

While the full impact of the Article 23 Ordinance on business in Hong Kong is yet to be determined, businesses continue to depart Hong Kong, with the city's sluggish economy increasingly subsumed under the Mainland's authoritarian government.[253] Business oper-

*The ruling allows for reciprocal recognition and enforcement between mainland China and Hong Kong rulings, ostensibly to reduce the need for parallel litigation through both court systems.

†For more on China's rule by law legal system, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 1, "Rule by Law," in *2023 Annual Report to Congress*, November 2023, 175–206.

ations in Hong Kong used to be "a fairly risk-free matter," Simon Cartledge, a research and publishing executive, told the *Wall Street Journal*, but now "there are question marks over everything."[254] The number of global companies with regional headquarters in Hong Kong has fallen 8.4 percent from 2019 to 2023, according to government data, while the number of staff retained by these global firms in Hong Kong has dropped 30 percent.[255] During the immediate months preceding the implementation of the Article 23 Ordinance, several global entities that were weighing Hong Kong for their Asia headquarters—including Canadian pension fund manager Alberta Investment Management Corp. (AIMCo), U.S. tech company Vantage Data Centers, and the Cayman Islands government—all announced their intention to instead place their Asia headquarters in Singapore.[256] AIMCo's CEO referenced geopolitical risks in an interview around the decision, while Vantage Data Centers is reportedly looking to sell their data centers in Hong Kong after the imposition of the Article 23 Ordinance.[257] Financial services companies in particular have looked to other regional finance hubs like Singapore for a more stable business environment, according to AmCham Hong Kong.[258] The number of European firms has also declined in Hong Kong, with an increase in the percentage of firms reporting they have decided to shift or have already shifted existing investments out of China toward Southeast Asia and other locations.[259]

Even as some U.S. and international firms avoid Hong Kong, mainland Chinese companies continue to enter the city.[260] In 2022, Chinese companies for the first time outnumbered U.S. firms with regional headquarters in Hong Kong.[261] InvestHK, the Hong Kong government's bureau responsible for attracting foreign direct investment (FDI), noted in its annual report that of the firms for which it helped open operations in Hong Kong in 2023, 136 came from mainland China while only 34 came from the United States.*[262] From 2020 to 2023, the total number of nonlocal firms with regional headquarters in Hong Kong has now declined by 168, or 11 percent, with U.S. firms declining the most.[263]

Hong Kong remains the largest source of FDI into mainland China. However, a large portion of FDI that appears to flow from Hong Kong to mainland China actually originates in mainland China itself.[264] Mainland Chinese firms take advantage of tax breaks and other financial incentives to set up offices in Hong Kong that manage their investments in the Mainland.[265] As firms from other countries pull back from investing in China, the share of FDI roundtripped through Hong Kong has increased.[266]

Tourists Avoid Hong Kong

Once a vibrant international tourist destination, Hong Kong is failing to attract visitors, having yet to attain pre-COVID levels. Hong Kong eased its COVID restrictions early in 2023, allowing a total of 34 million tourists to visit throughout the year; however, by December, monthly tourist numbers had reached just 65 per-

*This included the launch of businesses like the Hong Kong office of FTI Capital Advisors, a boutique investment bank focusing on mergers and acquisitions, capital raising, and financial advisory services. Government of Hong Kong Special Administrative Region of the People's Republic of China, *InvestHK Annual Report 2023*, February 1, 2024, 15; FTI Consulting, "FTI Capital Advisors Strengthens Positioning in Asia with Hong Kong Expansion," March 8, 2023.

cent of pre-COVID levels.[267] As of the most recent data through July 2024, total year-to-date visitors were still only at 70 percent of pre-COVID levels.*[268] The number of mainland tourists, who make up the bulk of total arrivals, was around 69 percent of the pre-pandemic level as of year-to-date July 2024.[269] Tourism from the United States and Europe also lags significantly.[270] The number of U.S. tourists visiting Hong Kong as of year-to-date July 2024 was only 67 percent of the comparable figure for 2018, while the number of UK tourists was only 49 percent.[271] Tourism from these countries is unlikely to rise in the near term, as the United States has joined other democracies like Canada and Australia in issuing travel advisories characterizing Hong Kong's ongoing implementation of its national security laws as "broad" and "arbitrary."[272] Following the passage of the Article 23 Ordinance, the Australian government expanded its advisory to warn that Australians in Hong Kong "could be detained without charge for up to 16 days and denied access to a lawyer for up to 48 hours" should they violate the ordinance's broadly defined national security offenses.[273] With the drop in Western tourists to Hong Kong, the Hong Kong tourism office is doubling down on efforts to draw in mainland tourists in a bid to boost retail and consumption.[274] The 2024–2025 Hong Kong budget included $141 million (HKD 1.1 billion) for tourism promotion activities.[275] Hong Kong businesses are adapting as well, promoting their stores on Chinese social media apps and ensuring websites are available in Mandarin to appeal to mainland tourists.[276]

Hong Kong Increasingly Integrated with Mainland

Increasingly, people move between Hong Kong and mainland China. These changes reflect, in part, economic incentives. Rising living costs continue to burden working-class Hong Kongers, who increasingly seek economic opportunities in mainland China.[277] As Hong Kongers shop and travel more frequently across the border, mainland Chinese talent continues to flow into Hong Kong.[278] The movement of individuals between Hong Kong and the Mainland is facilitated by the completion of cross-border infrastructure, including a high-speed train system, which has halved travel time between Hong Kong and some Chinese cities.[279] Additionally, consumer goods are generally cheaper across the border than in Hong Kong.[280] In February 2024, more Hong Kongers traveled to neighboring Shenzhen than any prior February since recordkeeping began in 1984.[281] Economists at Natixis estimate that Hong Kongers will spend approximately $10.8 billion (HKD 84 billion) in Guangdong Province this year, with a significant portion allocated to food, retail sales, and other commercial activities.[282] Moreover, according to an annual survey performed by the Hong Kong Institute of Asia-Pacific Studies at the Chinese University of Hong Kong, the percentage of Hong Kongers who would emigrate to the Mainland if given the opportunity has risen from 9.5 percent in 2020 to 20.3 percent in 2023.[283]

*The year 2018 is used as the pre-COVID year of comparison, as 2019 tourism figures were negatively impacted by pro-democracy protests. *BBC*, "Hong Kong Protests: How Badly Has Tourism Been Affected?" August 12, 2019.

Mainland Chinese talent also continues to pour into Hong Kong, dominating a new government visa program intended to attract foreign workers.[284] The Top Talent Pass Scheme, launched in 2022, offers visas of up to two years to foreign workers earning more than $320,000 (HKD 2.5 million) or graduates of the world's top universities.*[285] Despite Hong Kong authorities promoting openness to a wide range of foreigners, approximately 95 percent of applicants have been mainland Chinese.[286] Since the scheme's inception, roughly 55,000 mainland Chinese individuals have been granted extended visas in Hong Kong, many of whom have secured positions in finance, IT, and commercial services.[287] Workers entering under the scheme earn a median income over twice that of the average Hong Kong worker, adding many highly skilled Chinese workers to the Hong Kong labor force.[288] Moreover, the Hong Kong government has taken steps to further boost short-term business from the Mainland. In April 2024, government authorities announced that the limit for stays for visa holders from mainland China visiting Hong Kong would double to 14 days.[289] This move complements the expansion of another talent program in 2024, which now permits residents of Beijing, Shanghai, and the Greater Bay Area to apply for multi-entry visas to Hong Kong that allow stays of up to 30 days if the applicant specializes in certain sought-after industries.[290] This inflow of Chinese workers is also important to Hong Kong's demographic makeup, which continues to shed young people, declining from 21.3 percent of the population to 16.3 percent between 2014 and 2023.[291] The Hong Kong population, which fell in the years after protests rocked the city in 2019, finally grew in 2022 and 2023.[292] However, growth in 2023 was fueled by a special permit issued to 40,800 mainland Chinese allowing them to reside in Hong Kong permanently.[293]

Recruitment efforts by the Hong Kong government to attract lower-skilled laborers from the Mainland have encountered more mixed success and faced pushback from working-class Hong Kongers.[294] The low-skilled labor market in Hong Kong currently faces a shortage of approximately 30,000 workers, particularly in roles such as cooks and warehouse workers, as highlighted by LegCo member Peter Shiu.[295] However, Hong Kong companies find it expensive to sponsor foreign low-skilled workers due to requirements mandating that these workers be housed either in Hong Kong or mainland China at the company's expense.[296] To address the workforce gaps, the Hong Kong government is taking steps to attract mainland Chinese individuals to take up positions in certain blue-collar industries in Hong Kong, eliciting resistance from local communities.[297] For instance, CityBus, a transit company grappling with a shortage of drivers, announced plans to recruit 20 mainland Chinese drivers at salaries less than two-thirds of their Hong Kong counterparts.[298] This decision drew criticism from the CityBus Union, which raised concerns not only that the influx of mainland workers would depress the salary prospects of local Hong Kong drivers but also that

*The program does not require applicants to have received a local job offer prior to applying for the visa. Applications for the visa are made directly to the Hong Kong government. As long as the applicant meets the eligibility requirements, they can stay up to two years while they search for work in Hong Kong. Hong Kong Immigration Department, *Top Talent Pass Scheme*, June 18, 2024.

it would threaten safety due to mainland drivers being accustomed to driving on the opposite side of the road and adhering to different traffic regulations.[299]

Views toward Mainland China

Despite these growing links, most Hong Kongers still perceive mainland China with distrust, as evidenced by a December 2023 Pew poll revealing that nearly half of Hong Kong adults perceive Chinese power and influence in Hong Kong as a significant threat.[300] Notably, this sentiment surpasses concerns about the United States by 11 percent.[301] However, a substantial majority of Hong Kongers, 74 percent, express emotional attachment to China, underscoring a complex relationship.[302] While persistent tensions remain over Beijing's political crackdown and economic domination of Hong Kong, a majority of adults surveyed identify themselves as both Hong Konger and Chinese.[303] However, this sentiment varies across demographics, dissipating among the younger generation.[304] Among individuals under 35 years old, who were a driving force behind the 2019 Hong Kong protests, skepticism toward Chinese influence is pronounced, with 57 percent considering China a major threat.[305] Notably, less than half of this demographic group claims any Chinese identity, highlighting a growing disconnect between young Hong Kongers and China despite a growing number of this demographic being born in Hong Kong after its 1997 handover to China.[306]

Hong Kong Investment Fund Furthers China's Innovation and Military Aims

Hong Kong takes advantage of its historical reputation as an adherent to international norms and rule of law to attract investment that furthers China's security aims.[307] The Hong Kong Investment Corporation (HKIC) sovereign wealth fund, created in October 2022, will oversee the allocation of almost $8 billion to promote industrial and economic development in four target areas, including fintech, artificial intelligence, biotechnology, and high-end manufacturing.[308] Hong Kong's role in the GBA is to serve as a bridge between the nine mainland Chinese cities in the GBA and the world, attracting talent, capital, and innovation.[309] Given China's military-civil fusion strategy, however, these efforts will inevitably support China's military.[310] For example, semiconductors are one of the technologies the GBA has emphasized through the establishment of government innovation zones.[311] This is an area where the United States and allies are actively working to prevent China's advancement because of the military implications.[312] Despite this, the zone has attracted investment from a leading Swiss semiconductor company.[313] Hong Kong's ability to attract Western investment is particularly concerning given the larger military connotations of the GBA. According to China's official policy, the nine GBA cities should promote "the innovative development of civil-military integration."[314] SmartMore, a company dual-headquartered in Hong Kong and Shenzhen and developing artificial intelligence solutions for manufacturing, and Shanghai-based GeneSense, an artificial intelligence-enabled gene sequencing company, both received investments from HKIC

in 2024.[315] HKIC has announced plans for additional investments in biotechnology to support industrial, environmental, agricultural, and medical applications.[316] HKIC also recently announced an investment in a Beijing-based humanoid robot company in another example of how Hong Kong's investment efforts serve mainland China's innovation aims.[317] (For more on China's mission to develop advanced humanoid and quadruped robots, see Chapter 3, "U.S.-China Competition in Emerging Technologies.")

Hong Kong Slips as International Shipping Hub

While Hong Kong's infrastructure integration with the broader GBA has deepened through expanded infrastructure projects and people-to-people exchanges, its status as an international shipping hub continues to diminish.[318] The total container volume passing through Hong Kong's port plummeted to 14.3 million twenty-foot equivalent units (TEUs) in 2023, marking a significant 21.6 percent decline from 2019.[319] Even after the city lifted its COVID-19 lockdowns and resumed international travel, data for the fourth quarter of 2023 reveals a further contraction in container transit, with port cargo throughput decreasing by 8.8 percent compared to that quarter the previous year.[320] Hong Kong fell out of the world's top ten busiest container ports in 2023 for the first time, exemplifying the city's waning stature in international business.[321] Meanwhile, several mainland Chinese ports continue to outrank Hong Kong as shippers bypass Hong Kong and ship directly into and out of the Mainland.[322] The ports of Shanghai, Ningbo, Qingdao, Shenzhen, Guangzhou, and Tianjin now outrank Hong Kong in terms of container throughput as of 2024.[323] This decline emphasizes Hong Kong's diminishing advantages over other mainland cities compared to its historical prominence as the world's leading container port for the majority of the years between 1987 and 2004.[324]

Hong Kong Serves as Key Hub for Transshipments and Support to Russia

Despite its diminished status as a central shipping hub, Hong Kong continues to play a crucial role as a node for illicit transshipments to Russia in violation of U.S. and allied sanctions, with cryptocurrency payments facilitating this illicit trade.[325] Bad actors are taking advantage of Hong Kong's robust business environment to evade sanctions by quickly dissolving firms targeted by Western export controls and reforming new firms just days later.[326] According to the Silverado Policy Accelerator, a bipartisan think tank, exporters from China and Hong Kong shipped 85 percent of the semiconductors imported by Russia between March 2022 and September 2023, a trend that appears to have continued in 2024.[327] In 2022 alone, Hong Kong ranked as Russia's second-largest semiconductor import partner, shipping approximately $400 million worth of semiconductors during the first year of Russia's invasion of Ukraine.[328] Exporters in Hong Kong play a key role in shipping many other components to Russia as well, including other small elec-

Hong Kong Serves as Key Hub for Transshipments and Support to Russia—*Continued*

tronic components that are used by the Russian military to manufacture weapons and communication systems.[329]

A 2023 report from the Carnegie Endowment for International Peace identifies Hong Kong as a "transshipment hub for diverting Western-made microelectronic components to companies affiliated with the Russian military."[330] This includes the diversion of chips from top U.S. chipmakers such as Intel, Advanced Micro Devices, and Texas Instruments to Russia.[331] Hong Kong-based companies have also been implicated as suppliers of these high-end technologies to Russia.[332] For instance, Pixel Devices, based in Hong Kong, shipped at least $210 million in electronics to Russia from April 2022 to May 2024, according to the U.S. Department of the Treasury.[333] U.S. Secretary of State Antony Blinken in May 2024 expressed significant concerns about Chinese support for Russia, emphasizing that "Russia would struggle to sustain its assault on Ukraine without China's support."[334]

In response to these transshipment activities, Hong Kong companies, including Pixel Devices, were among the 20 additional Chinese and Hong Kong companies named in U.S. sanctions for aiding the development of Russia's industrial and military base in May 2024.[335] Other Hong Kong-based firms also sanctioned for supplying high-end technologies to Russia include Tulun International Holdings, which is involved in procuring unmanned aerial vehicles, and CFU Shipping, a logistics firm that is alleged to have delivered liquefied natural gas modules to support Russia's leading natural gas company.[336]

Hong Kong Organizations Lobby Overseas

Hong Kong's international representative offices, outposts founded before China's takeover of Hong Kong, promote the goals of the Mainland and the Beijing-backed Hong Kong government abroad.[337] Central to these efforts are the Hong Kong Economics and Trade Offices (HKETOs), identified by the Hong Kong Democracy Council (HKDC), a Washington, DC-based activist group, as a pivotal player in influencing U.S. policy toward Hong Kong and China through an extensive lobbying campaign.[338] Importantly, the HKETOs are not official diplomatic outposts of the Chinese government.[339] The HKETOs were established before the handover of Hong Kong to China and granted immunities and diplomatic protections in June 1997, a time when political agreements between the UK and China guaranteed that the HKETOs and broader Hong Kong interest groups would maintain autonomy from the Chinese government's goals.[340] The HKETOs have conducted public and private engagements in Washington, DC, and other U.S. cities that echo Beijing's positions on Hong Kong's political and legal systems.*[341] The ac-

*In 2022, the Commission recommended that Congress, pursuant to the Hong Kong Human Rights and Democracy Act, amend the International Organization Immunities Act to remove Hong Kong Economic and Trade Offices as a covered organization, thereby eliminating diplomatic privileges enjoyed by such offices and their employees in the United States. This amendment

tions of the HKETOs have further faced scrutiny globally, including in the UK, where a staffer of the London HKETO was arrested for allegedly violating the UK National Security Act and assisting foreign intelligence services between December 2023 and May 2024.[342] The HKETO allegedly made bank payments from HKETO accounts to individuals to help track Hong Kong activists who are living in the UK.[343] In Germany, a former employee of the local chapter of the Hong Kong Trade Development Council, a separate Hong Kong trade promotion body, was also arrested and accused of carrying out industrial espionage for Chinese intelligence services.[344]

Implications for the United States

Under Beijing's authoritarian control, the freedoms of press, speech, and assembly that differentiated Hong Kong from mainland cities are being eroded. Robust enforcement of the National Security Law and the promulgation of the new Article 23 Ordinance are intended to coerce the public, instill uncertainty and fear, and create an environment of self-censorship, which serves as a form of lawfare. Local and foreign tourists, students, and residents in Hong Kong can no longer be certain that their freedoms and rights will be upheld by Hong Kong's legal system or law enforcement.

The extraterritorial application of Hong Kong's national security laws also stands to threaten dissidents, naturalized citizens living abroad, and other foreigners who sympathize with Hong Kong, including those in the United States. These individuals face harassment and coercion despite residing in open democracies. Specifically, the Article 23 Ordinance targets activists overseas by denying them access to their financial assets and allowing for the revocation of passports and professional licenses, among other things. The Article 23 Ordinance's new offense of "external interference," paired with the threat of extreme sentencing, also intends to punish Hong Kongers and dissidents abroad for their interactions with foreigners. The Hong Kong government also targets the families of Hong Kong dissidents who still reside in the city. This relational repression, along with the transnational repression of Hong Kongers overseas, will continue to worsen as the Article 23 Ordinance is enforced, and it creates a potential legal conflict between the United States and Hong Kong.

Amid the atmosphere of oppression created under the Article 23 Ordinance and Beijing's sustained crackdown, firms operating in Hong Kong face an increasingly restrictive business environment that is reflective of conditions on the Mainland. This includes the possibility of restrictions on research and due diligence and the looming threat that standard business operations by foreign firms in Hong Kong will risk accusations of collaboration with "external

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could be reversed under one of the following conditions: China negotiates an agreement with the United States to have Hong Kong Economic and Trade Offices considered an official part of the People's Republic of China's mission to the United States and subject to the same requirements; or China alters its treatment of Hong Kong to allow for sufficient autonomy and abides by "one country, two systems," as enumerated by the Hong Kong Policy Act. In September 2024, the U.S. House of Representatives passed the Hong Kong Economic and Trade Office (HKETO) Certification Act, which would allow the U.S. president to remove HKETO privileges if Hong Kong does not maintain a significant degree of autonomy from China. Hong Kong Economic and Trade Office (HKETO) Certification Act, H.R.1103, February 17, 2023; U.S.-China Economic and Security Review Commission, *2022 Annual Report to Congress*, November 2022, 735–736.

forces," involve "state secrets," or otherwise violate the Article 23 Ordinance and the NSL. Even if the Hong Kong government does not explicitly punish fact-based reporting of Hong Kong's economic conditions seen as "harmful" to China, self-censorship and a lack of transparency among auditors, press, firms, and other industry participants pose risks to investors. These risks are compounded by Hong Kong's increasingly apparent role as a regional hub for sanctions and export control evasion. Meanwhile, Hong Kong continues to see its international status dwindle, with the city slipping as a shipping hub and its markets increasingly dominated by mainland rather than international firms. As the city continues to draw closer to its mainland neighbors both politically and economically, it remains unclear how much distinctiveness and autonomy Hong Kong can truly maintain.

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COMPREHENSIVE LIST OF THE COMMISSION'S 2024 RECOMMENDATIONS

Part II: Technology and Consumer Product Opportunities and Risks

Chapter 3: U.S.-China Competition in Emerging Technologies

The Commission recommends:

1. Congress establish and fund a Manhattan Project-like program dedicated to racing to and acquiring an Artificial General Intelligence (AGI) capability. AGI is generally defined as systems that are as good as or better than human capabilities across all cognitive domains and would surpass the sharpest human minds at every task. Among the specific actions the Commission recommends for Congress:
   - Provide broad multiyear contracting authority to the executive branch and associated funding for leading artificial intelligence, cloud, and data center companies and others to advance the stated policy at a pace and scale consistent with the goal of U.S. AGI leadership; and
   - Direct the U.S. secretary of defense to provide a Defense Priorities and Allocations System "DX Rating" to items in the artificial intelligence ecosystem to ensure this project receives national priority.
2. Congress consider legislation to:
   - Require prior approval and ongoing oversight of Chinese involvement in biotechnology companies engaged in operations in the United States, including research or other related transactions. Such approval and oversight operations shall be conducted by the U.S. Department of Health and Human Services in consultation with other appropriate governmental entities. In identifying the involvement of Chinese entities or interests in the U.S. biotechnology sector, Congress should include firms and persons:
     - Engaged in genomic research;
     - Evaluating and/or reporting on genetic data, including for medical or therapeutic purposes or ancestral documentation;
     - Participating in pharmaceutical development;
     - Involved with U.S. colleges and universities; and
     - Involved with federal, state, or local governments or agencies and departments.

- Support significant Federal Government investments in biotechnology in the United States and with U.S. entities at every level of the technology development cycle and supply chain, from basic research through product development and market deployment, including investments in intermediate services capacity and equipment manufacturing capacity.

3. To protect U.S. economic and national security interests, Congress consider legislation to restrict or ban the importation of certain technologies and services controlled by Chinese entities, including:
   - Autonomous humanoid robots with advanced capabilities of (i) dexterity, (ii) locomotion, and (iii) intelligence; and
   - Energy infrastructure products that involve remote servicing, maintenance, or monitoring capabilities, such as load balancing and other batteries supporting the electrical grid, batteries used as backup systems for industrial facilities and/or critical infrastructure, and transformers and associated equipment.
4. Congress encourage the Administration's ongoing rulemaking efforts regarding "connected vehicles" to cover industrial machinery, Internet of Things devices, appliances, and other connected devices produced by Chinese entities or including Chinese technologies that can be accessed, serviced, maintained, or updated remotely or through physical updates.
5. Congress enact legislation prohibiting granting seats on boards of directors and information rights to China-based investors in strategic technology sectors. Allowing foreign investors to hold seats and observer seats on the boards of U.S. technology startups provides them with sensitive strategic information, which could be leveraged to gain competitive advantages. Prohibiting this practice would protect intellectual property and ensure that U.S. technological advances are not compromised. It would also reduce the risk of corporate espionage, safeguarding America's leadership in emerging technologies.
6. Congress establish that:
   - The U.S. government will unilaterally or with key international partners seek to vertically integrate in the development and commercialization of quantum technology.
   - Federal Government investments in quantum technology support every level of the technology development cycle and supply chain from basic research through product development and market deployment, including investments in intermediate services capacity.
   - The Office of Science and Technology Policy, in consultation with appropriate agencies and experts, develop a Quantum Technology Supply Chain Roadmap to ensure that the United States coordinates outbound investment, U.S. critical supply chain assessments, the activities of the Committee on Foreign Investment in the United States (CFIUS), and federally supported research activities to ensure that the United States,

along with key allies and partners, will lead in this critical technology and not advance Chinese capabilities and development.

Chapter 4: Unsafe and Unregulated Chinese Consumer Goods: Challenges in Enforcing Import Regulations and Laws

The Commission recommends:

7. With respect to imports sold through an online marketplace, Congress eliminate Section 321 of the Tariff Act of 1930 (also known as the "de minimis" exemption), which allows goods valued under $800 to enter the United States duty free and, for all practical purposes, with less rigorous regulatory inspection. Congress should provide U.S. Customs and Border Protection adequate resources, including staff and technology, for implementation, monitoring, and enforcement.
8. Congress amend the Consumer Product Safety Act to (1) grant the U.S. Consumer Product Safety Commission (CPSC) unilateral mandatory recall authority over products where the Chinese seller is unresponsive to requests from the CPSC for further information or to initiate a voluntary recall and the CPSC has evidence of a substantial product hazard, defined as either failing to comply with any CPSC rule, regulation, standard, or ban or posing a substantial risk of injury to the public; and (2) classify Chinese e-commerce platforms as distributors to allow for enforcement of recalls and other safety standards for products sold on these platforms.
9. Congress direct the U.S. Department of Homeland Security and U.S. Customs and Border Protection, in conjunction with the U.S. Department of Commerce, to develop assessment tools capable of identifying the true origins of parts, components, and materials contained in products entering the United States to prevent tariff evasion and limit safety and security risks in light of the increasing complexity of global supply chains.
10. Congress require that the U.S. Trade Representative, in consultation with the U.S. Department of Commerce, the U.S. International Trade Commission, and other entities, as appropriate, prepare a comprehensive report within 90 days on the operation of the U.S.-Mexico-Canada Trade Agreement since its entry into force that provides data and information on:
    - Chinese-affiliated investments in Mexico and Canada and specific information on their production of goods and how those goods may enter the U.S. market either as finished products or as components in other products;
    - Trade flows of products produced in China to Mexico and Canada and how such trade flows have changed;
    - Prices of products produced in China shipped to Mexico and Canada as well as products shipped through those countries to the United States and how those prices relate to the prices of such goods shipped directly into the U.S. market; and
    - Trade enforcement actions by Mexico and Canada regarding Chinese-produced products (including those transshipped

through third countries' markets) and how such actions relate to U.S. trade enforcement actions.

11. Congress amend applicable laws to mandate that online marketplaces clearly disclose on product listings for Chinese-made goods the name, physical address, and contact information for the manufacturer. The online marketplaces should also be required to clearly display a warning label that the item is manufactured in a country that does not comply with U.S. consumer safety standards.
12. Congress direct the U.S. Government Accountability Office to investigate the reliability of safety testing certifications for consumer products and medical devices imported from China.

Part III: Competition and Conflict

Chapter 5: China and the Middle East

The Commission recommends:

13. Congress direct the Office of the Director of National Intelligence to produce and provide to the U.S. Department of the Treasury within six months a detailed study of Chinese purchases of Iranian oil over the span of the last five years. The study shall include analysis of China's use of transshipment points and shell companies as methods to insulate itself from sanctions. Congress should further direct that within six months of receipt of the study, the Treasury Department must make a determination if sanctionable activity is occurring and report its findings to Congress.
14. Congress direct the U.S. member on the International Maritime Organization (IMO) Council to use their voice and vote to require China to abide by its treaty obligations under the IMO conventions, including by upholding safety regulations on the use of Automatic Identification System transponders.

Chapter 6: Key Economic Strategies for Leveling the U.S.-China Playing Field

The Commission recommends:

15. Congress consider legislation to eliminate federal tax expenditures for investments in Chinese companies on the Entity List maintained by the U.S. Department of Commerce, or identified as a Chinese military company on either the "Non-Specially Designated National (SDN) Chinese Military-Industrial Complex Companies List" maintained by the U.S. Department of the Treasury or the "Chinese military companies" list maintained by the U.S. Department of Defense. Among the tax expenditures that would be eliminated prospectively are the preferential capital gains tax rate, the capital loss carry-forward provisions, and the treatment of carried interest.
16. To enhance the effectiveness of export controls, Congress should:
    - Improve the analytic and enforcement capabilities of the U.S. Department of Commerce's Bureau of Industry and Security (BIS) by providing resources necessary to hire more in-house

experts; establish a Secretary's Fellows Program to more effectively attract interagency talent; expand partnerships with the national labs; increase access to data and data analysis tools, including the acquisition of proprietary datasets and modern data analytic systems; and hire additional agents and analysts for the Office of Export Enforcement.

- Amend the Export Control Reform Act to require that within 30 days of granting a license for export to entities on the Entity List, including under the Foreign Direct Product Rule, BIS shall provide all relevant information about the license approval to the relevant congressional committees, subject to restrictions on further disclosure under 50 U.S.C. § 4820(h)(2)(B)(ii).
- Direct the president to:
  - Designate a senior official to coordinate efforts across the Administration to prioritize bilateral and multilateral support for U.S. export control initiatives; and
  - Establish a Joint Interagency Task Force, reporting to and overseen by the national security advisor and with its own budget and staff, to assess ways to achieve the goal of limiting China's access to and development of advanced technologies that pose a national security risk to the United States. The task force should include designees from the U.S. Departments of Commerce, Defense, State, Treasury, and Energy; the intelligence community; and other relevant agencies. It should assess the effectiveness of existing export controls; provide advice on designing new controls and/or using other tools to maximize their effect while minimizing their negative impact on U.S. and allied economies; and recommend new authorities, institutions, or international arrangements in light of the long-term importance of U.S.-China technology competition.
- Codify the "Securing the Information and Communications Technology and Services Supply Chain" Executive Order to ensure that as the authority is used more robustly, challenges to its status as an executive order will not constrain BIS's implementation decisions or delay implementation.

17. Congress direct the Administration to create an Outbound Investment Office within the executive branch to oversee investments into countries of concern, including China. The office should have a dedicated staff and appropriated resources and be tasked with:
    - Prohibiting outbound U.S. investment through a sector-based approach in technologies the United States has identified as a threat to its national or economic security;
    - Expanding the list of covered sectors with the goal of aligning outbound investment restrictions with export controls. The office should identify and refine the list of covered technologies in coordination with appropriate agencies as new innovations emerge; and

- Developing a broader mandatory notification program for sectors where investment is not prohibited to allow policymakers to accumulate visibility needed to identify potential high-risk investments and other sectors that pose a threat to U.S. national or economic security. In addition to direct investments, the notification regime should capture passive investment flows to help inform debates around the expansion of prohibitions to cover portfolio investment.

18. Congress repeal Permanent Normal Trade Relations (PNTR) for China. The PNTR status allows China to benefit from the same trade terms as U.S. allies, despite engaging in practices such as intellectual property theft and market manipulation. Repealing PNTR could reintroduce annual reviews of China's trade practices, giving the United States more leverage to address unfair trade behaviors. This move would signal a shift toward a more assertive trade policy aimed at protecting U.S. industries and workers from economic coercion.
19. Congress direct relevant departments and agencies to expand their data collection and transparency initiatives into the volume and types of investment flowing into China by taking the following actions:
    - Amending the International Investment and Trade in Services Survey Act to require the Bureau of Economic Analysis within the U.S. Department of Commerce to publish more detailed sectoral breakdowns of U.S. direct investment in China on a nationality basis and the U.S. Department of the Treasury to publish annual sector breakdowns of U.S. portfolio investment in China on a nationality basis. The portfolio investment sectors should be more specific than those provided by the Commerce Department for direct investment. Additionally, Congress should require the Treasury Department to publish quarterly updates—without sector breakdowns—of nationality-based portfolio investment in China.
    - Requiring the U.S. Department of Commerce to produce a report on the feasibility and methodology for publishing nationality-based results for direct investment, where offshore tax havens and locales of incorporation would not be said to receive hundreds of billions of dollars and true destinations of the capital would be accurately identified.
20. Congress direct the Administration to impose sanctions on Chinese financial institutions that violate sanctions, including those that are proven to be working with or supporting the Russian military industrial base or facilitating purchases of Iranian oil.
21. In light of the periodic and increasingly frequent removal of some of these materials from Chinese websites, Congress direct the executive branch to fund the creation and operation of a regularly updated, permanent data archive, in effect a series of snapshots of portions of the Chinese internet. In the past decade, foreign analysts have made use of open source Chinese-language materials to gain insight into various aspects of current policy as well as internal (but unclassified) discussions

of future military, diplomatic, and economic strategy. Information would be stored in the permanent data archive, accessible to both government and private analysts.

22. Congress consider legislation to set priorities and goals for U.S.-China economic relations. These policy priorities and goals should include:
    - Updating existing trade and economic tools to ensure their timely application, utility, and effectiveness in countering China's non-market economic policies;
    - Limiting U.S. economic and security dependence on supply chains in critical and emerging products, technologies, and services provided by companies controlled, operating in, or subject to the influence of China;
    - Enhancing the accountability of the executive branch to Congress and increasing the transparency of its actions to ensure coordinated governmental action and respect for Congress's constitutional Article I, Section 8 authority;
    - Prioritizing domestic production and employment while also recognizing the need, as appropriate, to coordinate and align policies with friends and allies;
    - Acting to address production overcapacity fueled by Chinese policies and actions; and
    - Advancing the resilience of the U.S. economy and ensuring its access to key inputs and technologies.
23. Congress pass legislation eliminating the ability of entities operating in U.S. Foreign-Trade Zones (FTZs) to qualify for zero or lower tariffs on products imported from China or Chinese-affiliated or -invested entities into the FTZ and then re-exported.
24. The relevant committees of Congress hold hearings to assess the desirability and feasibility of creating a trade defense coalition with other like-minded countries to forestall the risk of a second China shock. Such a grouping would seek to align policies for responding to the recent acceleration in China's exports of subsidized, underpriced materials and manufactured goods.

Chapter 7: China's New Measures for Control, Mobilization, and Resilience

The Commission recommends:

25. Congress direct the Office of the Director of National Intelligence, within 180 days, to conduct a classified assessment, and brief its findings to Congress, of the intelligence community's (IC) ability to accurately monitor strategic, nonmilitary indicators that would signal that China is preparing for imminent conflict and the extent to which China's increasing lack of transparency affects the IC's ability to monitor this information. The assessment should include, but not be limited to, the following:

- The IC's ability to monitor:
  - China's energy storage locations and stockpiling rates, particularly for crude oil, coal, and natural gas;
  - Production shifts from civilian to military industries;
  - China's national defense mobilization system; and
  - China's strategic reserves and their compositions and locations;
- The IC's ability to coordinate with non-Title 10 and -Title 50 federal agencies that have technical expertise in agriculture and trade to monitor China's food and energy stockpiling and any derived indicators that may signal a potential preparation for conflict;
- Whether the IC's current geospatial intelligence posture is adequate to compensate for the loss of open source information from China; and
- The desirability and feasibility of establishing an Energy Strategic Warning system involving coordination between relevant entities including the National Geospatial-Intelligence Agency and the U.S. Departments of Energy, Commerce, State, and the Treasury.

Chapter 8: China's Evolving Counter-Intervention Capabilities and the Role of Indo-Pacific Allies

The Commission recommends:

26. Congress direct the U.S. Department of Defense to produce within 60 days a classified net assessment report on current People's Liberation Army (PLA) Command, Control, Communications, Computers Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities and PLA electronic warfare (EW) capabilities (including electronic attack and electronic protection capabilities). The report should examine U.S. counter-C4ISR and counter-EW capabilities, assess the resiliency of U.S. capabilities, identify counter-C4ISR and counter-EW gaps, and provide a menu of procurement options to close the gaps. Not later than 60 days after its completion, the U.S. secretary of defense shall provide the report to the appropriate congressional committees and brief them on its findings.
27. Congress direct the Office of the Director of National Intelligence, in conjunction with the U.S. Departments of Defense, Commerce, and the Treasury, and other relevant agencies, to conduct a comprehensive review of potential technological chokepoints across the People's Republic of China military industrial base and devise plans to apply controls, in conjunction with allies, to slow China's military development.
28. Congress reinvigorate and recommit to space as an area of strategic competition, including by conducting a review of the commercial space industry to determine if there are regulatory updates that would ensure that the U.S. commercial space industry is able to innovate as quickly as possible while maintaining safety as a top priority.

Part IV: Taiwan and Hong Kong

Chapter 9: Taiwan

The Commission recommends:

29. Congress amend the Arms Export Control Act of 1976 to include Taiwan on the list of "NATO Plus" recipients.
30. Congress create a "Taiwan Allies Fund" that would provide foreign assistance only to countries that have an official diplomatic relationship with Taiwan. No country could receive more than 15 percent of the appropriated funding each year. Countries that no longer have a diplomatic relationship with Taiwan would immediately be ineligible for this funding.

Chapter 10: Hong Kong

The Commission recommends:

31. Congress require the Administration to produce a determination whether reasonable grounds exist for concluding that the Hong Kong Special Administrative Region should be designated as a Primary Money Laundering Concern (PMLC) jurisdiction under Section 311 of the Patriot Act due to its growing role as the central sanctions evasion hub and transshipment center for illicit finance and technology to Russia, Iran, and North Korea.
32. Congress direct the U.S. Department of the Treasury, in coordination with the U.S. Departments of State and Commerce, to provide the relevant congressional committees a report assessing the ability of U.S. and foreign financial institutions operating in Hong Kong to identify and prevent transactions that facilitate the transfer of products, technology, and money to Russia, Iran, and other sanctioned countries and entities in violation of U.S. export controls, financial sanctions, and related rules. The report should:
    - Evaluate the extent of Hong Kong's role in facilitating the transfer of products and technologies to Russia, Iran, other adversary countries, and the Mainland, which are prohibited by export controls from being transferred to such countries;
    - Evaluate Hong Kong's role in facilitating trade and financial transactions that violate U.S. sanctions on Russia, Iran, and other countries and entities subject to U.S. financial sanctions;
    - Examine whether Hong Kong's National Security Law has limited the ability of financial institutions to adhere to global standards for anti-money laundering and know-your-customer procedures; and
    - Describe the level of cooperation between Hong Kong and U.S. authorities in enforcing export controls and sanctions regimes.

ADDITIONAL VIEWS OF COMMISSIONER ROBIN CLEVELAND

In 2009, Senator Mitch McConnell (R-KY) first appointed me to the Commission. I am grateful to the Leader who has supported my effort over many years to serve with integrity and always speak my mind. The trust he has placed in me changed my life profoundly.

I also have been honored to serve alongside a distinguished group of Commissioners who contribute wisdom and energy to this important effort. The greatest privilege, however, is to learn from the dedicated, knowledgeable staff who bring language skills, deep expertise, curiosity, and, most of all, patience with the Commissioners as we work toward a consensus of views.

This year, I voted for the report and believe it largely builds on the Commission's record of understanding and providing policy recommendations regarding China's efforts to consolidate control domestically and expand its authority globally. Regrettably, there are two aspects of the report that reach beyond our commitment to provide China-based recommendations and raise concerns about unanticipated repercussions.

While I support suspension of the de minimis trade exemption specifically for Chinese e-commerce products because of concerns regarding safety hazards, forced labor, lack of enforcement related to counterfeit products, and the imbalance of the exemption level (U.S. exemption is $800; China is $7), I disagree with the decision to eliminate the provision in its entirety for e-commerce imports. Based on the most recent data available from Customs & Border Protection authorities, 42 percent of de minimis imports come from countries other than China. The Commission has spoken repeatedly about the need to strengthen relations with emerging markets as we seek to balance China's predatory political and economic practices. The decision to eliminate the de minimis exemption for e-commerce sales from all countries was taken without consideration of the potential damage that may be done to our relationships with Southeast Asian, Latin American, European, and African trading partners.

My second concern relates to our recommendation to eliminate capital gains, capital loss carry-forward provisions, and the treatment of carried interest for U.S. companies. This proposal was neither presented nor discussed in any Commission hearing, policy paper, or witness statement. While I agree with the spirit of the concern that the United States should restrict investments in dangerous Chinese military enterprises, the implementation and consequences of this provision have not been evaluated. The provision mirrors a previous recommendation that appeared designed to inflict harm on the U.S. private sector without clarity on the actual, if any, impact on Chinese enterprises which present a threat.

APPENDIX I
CHARTER

The Commission was created on October 30, 2000, by the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001, Pub. L. No. 106–398 (codified at 22 U.S.C. §7002), as amended by:

- The Treasury and General Government Appropriations Act, 2002, Pub. L. No. 107–67 (Nov. 12, 2001) (regarding employment status of staff and changing annual report due date from March to June);
- The Consolidated Appropriations Resolution, 2003, Pub. L. No. 108–7 (Feb. 20, 2003) (regarding Commission name change, terms of Commissioners, and responsibilities of the Commission);
- The Science, State, Justice, Commerce, and Related Agencies Appropriations Act, 2006, Pub. L. No. 109–108 (Nov. 22, 2005) (regarding responsibilities of the Commission and applicability of FACA);
- The Consolidated Appropriations Act, 2008, Pub. L. No. 110–161 (Dec. 26, 2007) (regarding submission of accounting reports, printing and binding, compensation for the executive director, changing annual report due date from June to December, and travel by members of the Commission and its staff);
- The Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015, Pub. L. No. 113–291 (Dec. 19, 2014) (regarding responsibilities of the Commission).
- Pub. L. No. 117–286 (Dec. 27, 2022) (technical amendment).

22 U.S.C. §7002. United States-China Economic and Security Review Commission

(a) Purposes

The purposes of this section are as follows:

(1) To establish the United States-China Economic and Security Review Commission to review the national security implications of trade and economic ties between the United States and the People's Republic of China.

(2) To facilitate the assumption by the United States-China Economic and Security Review Commission of its duties regarding the review referred to in paragraph (1) by providing for the transfer to that Commission of staff, materials, and infrastructure (including leased premises) of the Trade Deficit Review Commission that are appropriate for the review upon the submittal of the final report of the Trade Deficit Review Commission.

(b) Establishment of United States-China Economic and Security Review Commission

(1) In general

There is hereby established a commission to be known as the United States-China Economic and Security Review Commission (in this section referred to as the "Commission").

(2) Purpose

The purpose of the Commission is to monitor, investigate, and report to Congress on the national security implications of the bilateral trade and economic relationship between the United States and the People's Republic of China.

(3) Membership

The Commission shall be composed of 12 members, who shall be appointed in the same manner provided for the appointment of members of the Trade Deficit Review Commission under section 127(c)(3) of the Trade Deficit Review Commission Act (19 U.S.C. 2213 note), except that—

(A) appointment of members by the Speaker of the House of Representatives shall be made after consultation with the chairman of the Committee on Armed Services of the House of Representatives, in addition to consultation with the chairman of the Committee on Ways and Means of the House of Representatives provided for under clause (iii) of subparagraph (A) of that section;

(B) appointment of members by the President pro tempore of the Senate upon the recommendation of the majority leader of the Senate shall be made after consultation with the chairman of the Committee on Armed Services of the Senate, in addition to consultation with the chairman of the Committee on Finance of the Senate provided for under clause (i) of that subparagraph;

(C) appointment of members by the President pro tempore of the Senate upon the recommendation of the minority leader of the Senate shall be made after consultation with the ranking minority member of the Committee on Armed Services of the Senate, in addition to consultation with the ranking minority member of the Committee on Finance of the Senate provided for under clause (ii) of that subparagraph;

(D) appointment of members by the minority leader of the House of Representatives shall be made after consultation with the ranking minority member of the Committee on Armed Services of the House of Representatives, in addition to consultation with the ranking minority member of the Committee on Ways and Means of the House of Representatives provided for under clause (iv) of that subparagraph;

(E) persons appointed to the Commission shall have expertise in national security matters and United States-China relations, in addition to the expertise provided for under subparagraph (B)(i)(I) of that section;

(F) each appointing authority referred to under subparagraphs (A) through (D) of this paragraph shall—

(i) appoint 3 members to the Commission;

(ii) make the appointments on a staggered term basis, such that—

(I) 1 appointment shall be for a term expiring on December 31, 2003;

(II) 1 appointment shall be for a term expiring on December 31, 2004; and

(III) 1 appointment shall be for a term expiring on December 31, 2005;

(iii) make all subsequent appointments on an approximate 2-year term basis to expire on December 31 of the applicable year; and

(iv) make appointments not later than 30 days after the date on which each new Congress convenes;

(G) members of the Commission may be reappointed for additional terms of service as members of the Commission; and

(H) members of the Trade Deficit Review Commission as of October 30, 2000, shall serve as members of the Commission until such time as members are first appointed to the Commission under this paragraph.

(4) Retention of support

The Commission shall retain and make use of such staff, materials, and infrastructure (including leased premises) of the Trade Deficit Review Commission as the Commission determines, in the judgment of the members of the Commission, are required to facilitate the ready commencement of activities of the Commission under subsection (c) or to carry out such activities after the commencement of such activities.

(5) Chairman and Vice Chairman

The members of the Commission shall select a Chairman and Vice Chairman of the Commission from among the members of the Commission.

(6) Meetings

(A) Meetings

The Commission shall meet at the call of the Chairman of the Commission.

(B) Quorum

A majority of the members of the Commission shall constitute a quorum for the transaction of business of the Commission.

(7) Voting

Each member of the Commission shall be entitled to one vote, which shall be equal to the vote of every other member of the Commission.

(c) Duties

(1) Annual report

Not later than December 1 each year (beginning in 2002), the Commission shall submit to Congress a report, in both unclassified and classified form, regarding the national security implications and impact of the bilateral trade and economic relationship between the United States and the People's Republic of China. The report shall include a full analysis, along with conclusions and recommendations for legislative and administrative actions, if any, of the national security implications for the United States of the trade and current balances with the People's Republic of China in goods and services, financial transactions, and technology transfers. The Commission shall also take into account patterns of trade and transfers through third countries to the extent practicable.

(2) Contents of report

Each report under paragraph (1) shall include, at a minimum, a full discussion of the following:

(A) The role of the People's Republic of China in the proliferation of weapons of mass destruction and other weapon systems (including systems and technologies of a dual use nature), including actions the United States might take to encourage the People's Republic of China to cease such practices.

(B) The qualitative and quantitative nature of the transfer of United States production activities to the People's Republic of China, including the relocation of manufacturing, advanced technology and intellectual property, and research and development facilities, the impact of such transfers on the national security of the United States (including the dependence of the national security industrial base of the United States on imports from China), the economic security of the United States, and employment in the United States, and the adequacy of United States export control laws in relation to the People's Republic of China.

(C) The effects of the need for energy and natural resources in the People's Republic of China on the foreign and military policies of the People's Republic of China, the impact of the large and growing economy of the People's Republic of China on world energy and natural resource supplies, prices, and the environment, and the role the United States can play (including through joint research and development efforts and technological assistance) in influencing the energy and natural resource policies of the People's Republic of China.

(D) Foreign investment by the United States in the People's Republic of China and by the People's Republic of China in the United States, including an assessment of its economic and security implications, the challenges to market access confronting potential United States investment in the People's Republic of China, and foreign activities by financial institutions in the People's Republic of China.

(E) The military plans, strategy and doctrine of the People's Republic of China, the structure and organization of the People's Republic of China military, the decision-making process of the People's Republic of China military, the interaction between the civilian and military leadership in the People's Republic of China, the development and promotion process for leaders in the People's Republic of China military, deployments of the People's Republic of China military, resources available to the People's Republic of China military (including the development and execution of budgets and the allocation of funds), force modernization objectives and trends for the People's Republic of China military, and the implications of such objectives and trends for the national security of the United States.

(F) The strategic economic and security implications of the cyber capabilities and operations of the People's Republic of China.

(G) The national budget, fiscal policy, monetary policy, capital controls, and currency management practices of the People's Republic of China, their impact on internal stability in the People's Republic of China, and their implications for the United States.

(H) The drivers, nature, and implications of the growing economic, technological, political, cultural, people-to-people, and security relations of the People's Republic of China's with other countries, regions, and international and regional entities (including multilateral

organizations), including the relationship among the United States, Taiwan, and the People's Republic of China.

(I) The compliance of the People's Republic of China with its commitments to the World Trade Organization, other multilateral commitments, bilateral agreements signed with the United States, commitments made to bilateral science and technology programs, and any other commitments and agreements strategic to the United States (including agreements on intellectual property rights and prison labor imports), and United States enforcement policies with respect to such agreements.

(J) The implications of restrictions on speech and access to information in the People's Republic of China for its relations with the United States in economic and security policy, as well as any potential impact of media control by the People's Republic of China on United States economic interests.

(K) The safety of food, drug, and other products imported from China, the measures used by the People's Republic of China Government and the United States Government to monitor and enforce product safety, and the role the United States can play (including through technical assistance) to improve product safety in the People's Republic of China.

(3) Recommendations of report

Each report under paragraph (1) shall also include recommendations for action by Congress or the President, or both, including specific recommendations for the United States to invoke Article XXI (relating to security exceptions) of the General Agreement on Tariffs and Trade 1994 with respect to the People's Republic of China, as a result of any adverse impact on the national security interests of the United States.

(d) Hearings

(1) In general

The Commission or, at its direction, any panel or member of the Commission, may for the purpose of carrying out the provisions of this section, hold hearings, sit and act at times and places, take testimony, receive evidence, and administer oaths to the extent that the Commission or any panel or member considers advisable.

(2) Information

The Commission may secure directly from the Department of Defense, the Central Intelligence Agency, and any other Federal department or agency information that the Commission considers necessary to enable the Commission to carry out its duties under this section, except the provision of intelligence information to the Commission shall be made with due regard for the protection from unauthorized disclosure of classified information relating to sensitive intelligence sources and methods or other exceptionally sensitive matters, under procedures approved by the Director of Central Intelligence.

(3) Security

The Office of Senate Security shall—

(A) provide classified storage and meeting and hearing spaces, when necessary, for the Commission; and

(B) assist members and staff of the Commission in obtaining security clearances.

(4) Security clearances

All members of the Commission and appropriate staff shall be sworn and hold appropriate security clearances.

(e) Commission personnel matters

(1) Compensation of members

Members of the Commission shall be compensated in the same manner provided for the compensation of members of the Trade Deficit Review Commission under section 127(g)(1) and section 127(g)(6) of the Trade Deficit Review Commission Act (19 U.S.C. 2213 note).

(2) Travel expenses

Travel expenses of the Commission shall be allowed in the same manner provided for the allowance of the travel expenses of the Trade Deficit Review Commission under section 127(g)(2) of the Trade Deficit Review Commission Act.

(3) Staff

An executive director and other additional personnel for the Commission shall be appointed, compensated, and terminated in the same manner provided for the appointment, compensation, and termination of the executive director and other personnel of the Trade Deficit Review Commission under section 127(g)(3) and section 127(g)(6) of the Trade Deficit Review Commission Act. The executive director and any personnel who are employees of the United States-China Economic and Security Review Commission shall be employees under section 2105 of title 5 for purposes of chapters 63, 81, 83, 84, 85, 87, 89, and 90 of that title. [Amended by P.L. 111–117 to apply section 308(e) of the United States China Relations Act of 2000 (22 U.S.C. 6918(e)) (relating to the treatment of employees as Congressional employees) to the Commission in the same manner as such section applies to the Congressional-Executive Commission on the People's Republic of China.]

(4) Detail of government employees

Federal Government employees may be detailed to the Commission in the same manner provided for the detail of Federal Government employees to the Trade Deficit Review Commission under section 127(g)(4) of the Trade Deficit Review Commission Act.

(5) Foreign travel for official purposes

Foreign travel for official purposes by members and staff of the Commission may be authorized by either the Chairman or the Vice Chairman of the Commission.

(6) Procurement of temporary and intermittent services

The Chairman of the Commission may procure temporary and intermittent services for the Commission in the same manner provided for the procurement of temporary and intermittent services for the Trade Deficit Review Commission under section 127(g)(5) of the Trade Deficit Review Commission Act.

(f) Authorization of appropriations

(1) In general

There is authorized to be appropriated to the Commission for fiscal year 2001, and for each fiscal year thereafter, such sums as may be necessary to enable the Commission to carry out its functions under this section.

(2) Availability
Amounts appropriated to the Commission shall remain available until expended.

(g) Applicability of chapter 10 of title 5
The provisions of chapter 10 of title 5 shall apply to the activities of the Commission.

(h) Effective date
This section shall take effect on the first day of the 107th Congress.

(Pub. L. 106–398, §1 [[div. A], title XII, §1238], Oct. 30, 2000, 114 Stat. 1654 , 1654A–334; Pub. L. 107–67, title VI, §§645(a), 648, Nov. 12, 2001, 115 Stat. 556; Pub. L. 108–7, div. P, §2(b)(1), (c)(1), Feb. 20, 2003, 117 Stat. 552; Pub. L. 109–108, title VI, §635(b), Nov. 22, 2005, 119 Stat. 2347; Pub. L. 110–161, div. J, title I, Dec. 26, 2007, 121 Stat. 2285; Pub. L. 113–291, div. A, title XII, §1259B(a), Dec. 19, 2014, 128 Stat. 3578.)

Amendments

2022—Subsec. (g). Pub. L. 117–286 substituted "chapter 10 of title 5" for "FACA" in the heading and "chapter 10 of title 5" for "the Federal Advisory Committee Act (5 U.S.C. App.)" in text.

2014—Subsec. (c)(2). Pub. L. 113–291 added subpars. (A) to (K) and struck out former subpars. (A) to (J) which described required contents of report.

2007—Subsec. (c)(1). Pub. L. 110–161 substituted "December" for "June".

2005—Subsec. (g). Pub. L. 109–108 amended heading and text of subsec. (g) generally. Prior to amendment, text read as follows: "The provisions of the Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the Commission."

2003—Pub. L. 108–7, §2(b)(1)(A), inserted "Economic and" before "Security" in section catchline.
Subsec. (a)(1), (2). Pub. L. 108–7, §2(b)(1)(B), inserted "Economic and" before "Security".
Subsec. (b). Pub. L. 108–7, §2(b)(1)(C)(i), inserted "Economic and" before "Security" in heading.
Subsec. (b)(1). Pub. L. 108–7, §2(b)(1)(C)(ii), inserted "Economic and" before "Security".
Subsec. (b)(3). Pub. L. 108–7, §2(b)(1)(C)(iii)(I), which directed the amendment of introductory provisions by inserting "Economic and" before "Security", could not be executed because "Security" does not appear.
Subsec. (b)(3)(F). Pub. L. 108–7, §2(c)(1), added subpar. (F) and struck out former subpar. (F) which read as follows: "members shall be appointed to the Commission not later than 30 days after the date on which each new Congress convenes;".
Subsec. (b)(3)(H), (4), (e)(1), (2). Pub. L. 108–7, §2(b)(1)(C)(iii)(II), (iv), (D)(i), (ii), which directed insertion of "Economic and" before "Security", could not be executed because "Security" does not appear.

Subsec. (e)(3). Pub. L. 108–7, §2(b)(1)(D)(iii)(II), inserted "Economic and" before "Security" in second sentence.

Pub. L. 108–7, §2(b)(1)(D)(iii)(I), which directed the amendment of first sentence by inserting "Economic and" before "Security", could not be executed because "Security" does not appear.

Subsec. (e)(4), (6). Pub. L. 108–7, §2(b)(1)(D)(iv), (v), which directed the amendment of pars. (4) and (6) by inserting "Economic and" before "Security", could not be executed because "Security" does not appear.

2001—Subsec. (c)(1). Pub. L. 107–67, §648, substituted "June" for "March".

Subsec. (e)(3). Pub. L. 107–67, §645(a), inserted at end "The executive director and any personnel who are employees of the United States-China Security Review Commission shall be employees under section 2105 of title 5 for purposes of chapters 63, 81, 83, 84, 85, 87, 89, and 90 of that title."

APPENDIX II
BACKGROUND OF COMMISSIONERS

Robin Cleveland, PhD, Chairman

Chairman Robin Cleveland was reappointed to the Commission by Senate Republican Leader Mitch McConnell for a term expiring December 31, 2024.

Chairman Cleveland served U.S. Senator Mitch McConnell (R-KY) in a number of positions including in his personal office, on the Senate Select Committee on Intelligence, the Senate Foreign Relations Committee, and as Clerk of the Foreign Operations Subcommittee of the Senate Appropriations Committee. In 2002, Dr. Cleveland was appointed as the Associate Director for National Security and International Affairs in the Office of Management and Budget, Executive Office of the President. During her tenure in the White House, Dr. Cleveland worked to improve Department of Defense policies and acquisition programs to ensure they effectively aligned with budget processes. Dr. Cleveland also co-led the interagency effort to develop and implement two Presidential initiatives: the Millennium Challenge Corporation (MCC) and the President's Emergency Plan for AIDS Relief (PEPFAR). MCC and PEPFAR reflect her commitment to advance humanitarian and development goals while strengthening policy, performance, and resource management. In 2005, Dr. Cleveland was appointed as Counselor to the President of the World Bank where she had a broad policy, budget, and fund-raising portfolio including debt relief programs in Africa.

After three decades of government service, Cleveland received her PhD in Counseling. She is now in private practice and serves an as adjunct faculty member at George Washington University (GWU). While pursuing her degree, Dr. Cleveland was the Executive Director of the Office of Student Life at the Graduate School of Education and Human Development at GWU.

Chairman Cleveland graduated from Wesleyan University with honors and received her Masters and PhD in Counseling from The George Washington University.

Reva Price, Vice Chair

Reva Price is the former Director of Outreach and Senior Advisor for former Speaker of the House Nancy Pelosi. During her more than seventeen-year tenure with Speaker Pelosi, Vice Chair Price played a central role across the spectrum of domestic and foreign policy issues. She handled key aspects of several foreign policy portfolios with particular emphasis on China as well as the Middle East. She was also responsible for building relationships with a varied and wide segment of groups, coalitions, and non-governmental organizations, strengthening communication and awareness of the Speaker's

priorities and activities to the American people. She was appointed to the Commission by then House Speaker Nancy Pelosi for a term expiring December 31, 2024.

Prior to working on Capitol Hill, Vice Chair Price spent more than two decades working for non-profit organizations in Washington, DC engaged in both domestic and international affairs. She advocated for her organization's policy priorities to the Congress, the Administration, and International Organizations including the OSCE and the United Nations. She is a graduate of the State University of New York at Binghamton.

Aaron Friedberg

Aaron Friedberg is Professor of Politics and International Affairs at Princeton University, where he has been a member of the faculty since 1987, and is co-director of Princeton's Center for International Security Studies. He is also a non-resident senior fellow at the American Enterprise Institute and a counselor to the National Bureau of Asian Research. From 2003 to 2005 he served as a Deputy Assistant for National Security Affairs in the office of the Vice President and he was subsequently appointed to the Defense Policy Board. In 2000–2001 he was a member of a panel tasked by Congress with reviewing the CIA's analysis of China. He has conducted studies for a number of government agencies, including the Office of Net Assessment in the Office of the Secretary of Defense and the National Security Council.

In 2001–2002 Friedberg was selected as the first occupant of the Henry A. Kissinger Chair at the Library of Congress. He has been a research fellow at the Australian Strategic Policy Institute, the Norwegian Nobel Institute, the Smithsonian Institution's Woodrow Wilson International Center for Scholars in Washington, D.C., and Harvard University's Center for International Affairs. He is a member of the Council on Foreign Relations and the International Institute for Strategic Studies in London.

Friedberg is the author of several books, including *A Contest for Supremacy: China, America, and the Struggle for Mastery in Asia* (2011), *Beyond Air-Sea Battle: The Debate Over U.S. Military Strategy in Asia* (2014), and *Getting China Wrong* (2022).

Dr. Friedberg received his A.B., M.A., and Ph.D. degrees from Harvard University.

Commissioner Friedberg was reappointed by Senate Republican Leader Mitch McConnell for a term expiring December 31, 2025.

Kimberly T. Glas

Commissioner Kimberly Glas was reappointed by Senate Majority Leader Charles Schumer for a term expiring December 31, 2024. She served as Vice Chair of the Commission for the 2022 report cycle.

Commissioner Glas joined the National Council of Textile Organizations (NCTO) in May 2019 as President and CEO representing domestic manufacturers of textiles and apparel.

She has over two decades experience in government and policy advocacy focused on economics, trade, and manufacturing.

She served as Executive Director of the BlueGreen Alliance, a non-profit partnership of labor unions and environmental organizations. In that capacity, she led an organization that works to advance policies to help achieve a stronger economy and a more sustainable future at the intersection of energy, the environment, and trade.

Before leading the BlueGreen Alliance, Commissioner Glas served as the Deputy Assistant Secretary for Textiles, Consumer Goods, and Materials at the U.S. Department of Commerce. In that role, she worked to improve the domestic and international competitiveness of the broad product range of U.S. industries.

Commissioner Glas served for a decade on Capitol Hill working extensively on manufacturing, trade, and economic policy issues for Congressman Michael H. Michaud from Maine and Congressman John J. LaFalce from New York. As Deputy Chief of Staff and Legislative Director for Congressman Michaud, she led efforts to establish the House Trade Working Group, a key coalition of Members of Congress that works extensively on trade policy and domestic competitiveness issues to this day.

Ms. Glas earned a Bachelor of Arts in History and graduated summa cum laude from the State University of New York at Geneseo.

The Honorable Carte P. Goodwin

Senator Carte P. Goodwin was reappointed to the Commission by Senate Democratic Leader Chuck Schumer for a term expiring December 31, 2025.

He is an attorney with the law firm of Frost Brown Todd, LLP where he serves as the Partner-in-Charge of its Charleston office, vice chair of the Appellate Practice Group, and leader of the firm's Industry Consultants and Advisors team. Goodwin's practice includes litigation and appellate advocacy, and advising clients on government relations, regulatory matters, and commercial transactions. He currently serves as the Chair of the West Virginia Bar Appellate Committee and is a permanent member of the Judicial Conference of the U.S. Court of Appeals for the Fourth Circuit. In 2020, he was recognized by the State Bar's philanthropic association as a West Virginia Bar Foundation Fellow, and previously served as President of the West Virginia Bar Association.

In July of 2010, then West Virginia Governor Joe Manchin III appointed Goodwin to the United States Senate to fill the vacancy caused by the passing of Senator Robert C. Byrd, where he served until a special election was held to fill the remainder of Senator Byrd's unexpired term.

From 2005 to 2009, Goodwin served four years as General Counsel to then Governor Manchin, during which time he also chaired the Governor's Advisory Committee on Judicial Nominations. In addition, Goodwin chaired the West Virginia School Building Authority and served as a member of the State Consolidated Public Retirement Board. Following his return to private practice in 2009, Goodwin was appointed to chair the Independent Commission on Judicial Reform, along with former Supreme Court Justice Sandra Day O'Connor, which was tasked with evaluating the need for broad systemic reform to West Virginia's judicial system.

Goodwin also previously worked as a law clerk for the Honorable Robert B. King of the United States Court of Appeals for the Fourth Circuit. A native of Mt. Alto, West Virginia, Goodwin received his Bachelor of Arts degree in Philosophy from Marietta College in Marietta, Ohio, in 1996 and received his Doctor of Law degree from the Emory University School of Law, graduating Order of the Coif in 1999.

Goodwin currently resides in Charleston, West Virginia, with his wife, Rochelle; son, Wesley Patrick; and daughter, Anna Vail.

Jacob Helberg

Jacob Helberg is a Senior Advisor to the Chief Executive Officer of Palantir Technologies and the author of *The Wires of War: Technology and the Global Struggle for Power* (Simon & Schuster, October 2021). Helberg is an Adjunct Senior Fellow for the Technology and National Security Program at CNAS and was a Senior Advisor at the Stanford University Program on Geopolitics and Technology until 2022. From 2016 to 2020, Helberg was Google's global lead for the company's internal global product policy efforts to combat foreign interference. Prior to joining Google, Helberg was a member of the founding team of GeoQuant, a geopolitical risk forecasting technology company acquired by Fitch Ratings. Jacob Helberg received his M.S. in cybersecurity risk and strategy from New York University.

Commissioner Helberg was appointed to the Commission by then House Speaker Kevin McCarthy for a term expiring December 31, 2024.

Michael Kuiken

Mike Kuiken serves as a Commissioner on the U.S.-China Economic and Security Review Commission following nearly 23 years in the U.S. Senate. He is also a Distinguished Visiting Fellow at the Hoover Institution at Stanford University, an Expert Advisor at the Strategic Competition Studies Project, and an advisor to CEOs, boards, and senior leaders of investment, AI, defense, and technology firms across the country.

Mike previously served as Majority Leader Schumer's National Security Advisor, holding the Senate's most senior national security staff role. He also crafted and led the successful campaign that secured the passage of the CHIPS and Science Act and played a key role in establishing and managing the Senate's Artificial Intelligence Insight Forums.

Prior to joining Senator Schumer's team, Mike spent more than 12 years as a professional staff member on the Senate Armed Services Committee.

Over the course of his career, Mike has been on the front lines of virtually every consequential national security policy issue—the war on terrorism, wars in Iraq and Afghanistan, crisis in Darfur, U.S. pressure campaign against Iran, Arab Spring, conflict in Syria, rise of the Islamic State, Benghazi, America's rebalance to confront China, Russia's interference in American democracy, responding to cyber events, Taiwan, and the ongoing conflicts in Ukraine and Gaza. He has traveled to more than 75 countries and has visited the frontlines of every major war zone since 9/11.

Mike began his career on the staff of the late Senator Carl Levin.

Commissioner Michael Kuiken was appointed to the Commission by Senate Democratic Leader Chuck Schumer for a term expiring December 31, 2025.

Leland R. Miller

Commissioner Leland Miller is the co-founder and CEO of China Beige Book.

A noted authority on China's economy and financial system, he is a frequent commentator on major media outlets and has served as guest host of two of the financial world's top morning news shows, CNBC Squawk Box and Bloomberg Surveillance. His work is featured regularly in the *Wall Street Journal, New York Times, Financial Times, Washington Post* and others.

Before co-founding China Beige Book in 2010, Leland was a capital markets attorney based out of New York and Hong Kong and worked on the deal team at a global investment bank. He holds a law degree from the University of Virginia School of Law, where he was Hardy C. Dillard fellow and editor-in-chief of the International Law Journal; a master's degree in Chinese History from Oxford University (St. Antony's College); a BA in European History from Washington & Lee University; and a graduate Chinese language fellowship from Tunghai University (Taiwan). He returned to W&L as the Williams School's Executive-in-Residence in 2015.

Leland is an elected member of the National Committee on U.S.-China Relations, an elected life member of the Council on Foreign Relations, a board member of the Global Interdependence Center, and a non-resident Senior Fellow at the Brent Scowcroft Center on International Security at the Atlantic Council.

Commissioner Miller was appointed by Speaker Mike Johnson for a term expiring December 31, 2025.

The Honorable Randall Schriver

Mr. Randall Schriver is the Chairman of the Board of the Project 2049 Institute and a partner at Pacific Solutions LLC. He is also a lecturer for Stanford University's "Stanford-in-Washington" program, is on the Board of Advisors to the Sasakawa Peace Foundation USA, and is on the Board of Directors of the US-Taiwan Business Council.

Just prior, he served for two years as the Assistant Secretary of Defense for Indo-Pacific Security Affairs where he led a team of nearly one hundred professionals and was the principal advisor to the Secretary of Defense on matters related to the Indo-Pacific region.

Prior to his Senate confirmation, Mr. Schriver was one of five founding partners of Armitage International LLC, a consulting firm that specializes in international business development and strategies. He was also CEO and President of the Project 2049 Institute, a non-profit research organization dedicated to the study of security trend lines in Asia. He was also an adjunct lecturer for Stanford University's "Stanford-in-Washington" program where he taught a quarter long course on U.S. foreign policy every fall and spring for fourteen years.

Previously, Mr. Schriver served as Deputy Assistant Secretary of State for East Asian and Pacific Affairs. He was responsible for China, Taiwan, Mongolia, Hong Kong, Australia, New Zealand, and the Pacific Islands. From 2001 to 2003, he served as Chief of Staff and Senior Advisor to the Deputy Secretary of State. From 1994 to 1998, he worked in the Office of the Secretary of Defense, including as the senior official responsible for U.S. bilateral relations with the People's Liberation Army and the bilateral security and military relationships with Taiwan.

Prior to his civilian service, he served as an active duty Navy Intelligence Officer from 1989 to 1991, including a deployment in support of Operation Desert Shield/Desert Storm. After active duty, he served in the Navy Reserves for nine years, including as Special Assistant to the Chairman of the Joint Chiefs of Staff and as an attaché at U.S. Embassies Beijing and Ulaanbaatar.

Mr. Schriver hails from Oregon and received a Bachelor of Arts degree in history from Williams College and a Master of Arts degree from Harvard University. He has won numerous military and civilian awards from the U.S. government and was recently presented with the Department of Defense Medal for Distinguished Public Service (highest civilian award). While at the State Department he was presented with the Order of the Propitious Clouds by the President of Taiwan for service promoting U.S.-Taiwan relations. He is married to Jordan Schriver, and is father to Lucas, Rory, Brody, and Mae.

Commissioner Schriver was reappointed by Senate Republican Leader Mitch McConnell for a term expiring December 31, 2025.

Cliff Sims

Commissioner Cliff Sims served as Deputy Director of National Intelligence for Strategy and Communications, helping to oversee the 18 agencies of the U.S. intelligence community (IC) and playing an integral role in shifting the IC's funding and focus toward the threat of a rising and adversarial China. Sims was previously Special Assistant to the President and Director of White House Message Strategy. He has appeared on Fox News, CNN, MSNBC, CBS, and ABC, and his opinions on national security, foreign policy, and current events have been published in The Wall Street Journal, Newsweek, The National Interest, and numerous other publications. Commissioner Sims graduated Magna Cum Laude from the University of Alabama with a degree in Political Science and received an Executive Certificate in Public Leadership from Harvard University's John F. Kennedy School of Government.

Commissioner Sims was appointed by Speaker Mike Johnson for a term expiring December 31, 2025.

The Honorable Jonathan N. Stivers

Commissioner Jonathan Stivers has more than 25 years of high-level foreign policy experience in the Congress and the Administration specializing in U.S.-China relations, Asian affairs, national security, trade and economics, international development, and human rights.

Jon currently is the U.S. Director at the Committee for Freedom in Hong Kong (CFHK) Foundation. He recently served as the Minority Staff Director on the Select Committee on the Strategic Competition Between the U.S. and Chinese Communist Party and as a Professional Staff Member on the House State-Foreign Operations Appropriations Subcommittee overseeing the budgets for the State Department and the U.S. Agency for International Development (USAID). He also served as the Staff Director on the Congressional-Executive Commission on China where he spearheaded the Uyghur Forced Labor Prevention Act and legislation on Tibet and Hong Kong while leading a staff of 14 researchers and analysts in support of annual reports and policy recommendations.

In the Obama Administration, Jon served as the USAID Assistant Administrator for the Bureau for Asia. In this Senate-confirmed position he managed a budget of approximately $1.2 billion in foreign assistance and led a staff of approximately 1,200 development professionals in 32 countries in East Asia and the Pacific Islands, South Asia, and Central Asia. He testified before Congressional committees on almost two dozen occasions on topics related to the Asia-Pacific Rebalance policy, China's Belt and Road Initiative, and on health, development, humanitarian, and democracy promotion initiatives in the region.

Prior to the Executive Branch, Jon served as Senior Advisor to Speaker Pelosi for 15 years. He played a leadership role on numerous foreign policy initiatives related to China and the Asia-Pacific region, trade, currency manipulation, and human rights while serving in the offices of the Speaker, Democratic Leader and Whip. In addition, he was a Senior Legislative Assistant to Rep. Pelosi when she was the Ranking Member of the State-Foreign Operations Appropriations Subcommittee and Jon was a leader in the effort to defeat China PNTR/WTO accession. He also worked in the Office of the Democratic Whip for former Rep. David Bonior (MI).

Jon earned a Masters of International Policy and Practice from The Elliott School of International Affairs at The George Washington University in Asian Affairs and a Bachelor of Arts from James Madison College at Michigan State University in International Relations.

Commissioner Stivers was appointed by House Democratic Leader Hakeem Jeffries for a term expiring December 31, 2025.

Michael R. Wessel

Commissioner Michael R. Wessel, an original member of the Commission, was reappointed by then House Speaker Nancy Pelosi for a term expiring December 31, 2024.

Commissioner Wessel served on the staff of former House Democratic Leader Richard Gephardt for more than two decades, leaving his position as general counsel in March 1998. In addition, Commissioner Wessel was Congressman Gephardt's chief policy advisor, strategist, and negotiator. He was responsible for the development, coordination, management, and implementation of the Democratic leader's overall policy and political objectives, with specific responsibility for international trade, finance, economics, labor, and taxation.

During his more than 20 years on Capitol Hill, Commissioner Wessel served in a number of positions. As Congressman Gephardt's principal Ways and Means aide, he developed and implemented numerous tax and trade policy initiatives. He participated in the enactment of every major trade policy initiative from 1978 until his departure in 1998. In the late 1980s, he was the executive director of the House Trade and Competitiveness Task Force, where he was responsible for the Democrats' trade and competitiveness agenda as well as overall coordination of the Omnibus Trade and Competitiveness Act of 1988. He currently serves as staff chair of the Labor Advisory Committee for Trade Negotiations and Trade Policy to the USTR and Secretary of Labor.

Commissioner Wessel was intimately involved in the development of comprehensive tax reform legislation in the early 1980s and every major tax bill during his tenure. Beginning in 1989, he became the principal advisor to the Democratic leadership on economic policy matters and served as tax policy coordinator to the 1990 budget summit.

In 1988, he served as national issues director for Congressman Gephardt's presidential campaign. During the 1992 presidential campaign, he assisted the Clinton presidential campaign on a broad range of issues and served as a senior policy advisor to the Clinton Transition Office. In 2004, he was a senior policy advisor to the Gephardt for President Campaign and later co-chaired the Trade Policy Group for the Kerry presidential campaign. In 2008, he was publicly identified as a trade and economic policy advisor to the Obama presidential campaign and advised the Clinton campaign in 2016 and Biden campaign in 2020.

He coauthored a number of articles with Congressman Gephardt and a book, *An Even Better Place: America in the 21st Century*. Commissioner Wessel served as a member of the U.S. Trade Deficit Review Commission in 1999–2000, a congressionally created commission charged with studying the nature, causes, and consequences of the U.S. merchandise trade and current account deficits.

Today, Commissioner Wessel is President of The Wessel Group Incorporated, a public affairs consulting firm offering expertise in government, politics, and international affairs. Commissioner Wessel holds a Bachelor of Arts and a Juris Doctorate from The George Washington University. He is a member of the Bars of the District of Columbia and of Pennsylvania and is a member of the Council on Foreign Relations. He and his wife Andrea have four children and two grandchildren.

Michael Castellano, Executive Director

Mike Castellano joined the Commission as Executive Director in May 2024. Previously, he was serving as Senior Advisor to the Under Secretary of Commerce for Industry & Security (BIS), where he led various special projects and stakeholder outreach relating to export control policy and the Information and Communications Technology and Services (ICTS) authority for the Office of the Under Secretary.

Mike spent the prior 20 years focused heavily on international trade policy, including extensive work on China. Ten of those years were as Vice President, Government Relations at the Walt Disney

Company, focusing on Disney's international policy agenda. While working for Disney he served on the International Trade Advisory Committee for Intellectual Property, advising the Department of Commerce and the U.S. Trade Representative on international trade policy. Before Disney, Mike spent ten years on Capitol Hill. Six of those years he worked for Senate Majority/Minority Leader Harry Reid, ending as Senior Counsel & Senior Policy Advisor, where he was responsible for issues of international trade and related international economic policy, including a significant focus on China, intellectual property rights and cyber security (commercial side), among other areas. The previous four years Mike worked as Trade Counsel for the Committee on Ways & Means Democrats and Tax & Trade Counsel for U.S. Representative Sandy Levin covering the full scope of international trade policy issues.

Michael started his career clerking for Judge Francis Murnaghan of the U.S. Court of Appeals for the Fourth Circuit, followed by a stint practicing international trade law at petitioner's law firm Dewey Ballantine, LLP. He received his J.D. magna cum laude from Harvard Law School, M.A.L.D. from the Fletcher School of Law and Diplomacy, and B.A. with honors in political science from Johns Hopkins University.

APPENDIX III

PUBLIC HEARINGS OF THE COMMISSION

Full transcripts and written testimonies are available online at the Commission's website: *www.USCC.gov*.

February 1, 2024: Public Hearing on "Current and Emerging Technologies in U.S.-China Economic and National Security Competition" Washington, DC

Commissioners present: Robin Cleveland, Acting Chairman; Aaron Friedberg; Kimberly T. Glas; Jacob Helberg (Hearing Co-Chair); Reva Price, Vice Chair; Hon. Randall Schriver; Michael R. Wessel (Hearing Co-Chair).

Witnesses: Nazak Nikakhtar, Wiley Rein LLP; Ivan Tsarynny, Feroot Security; Jack Corrigan, Center for Security and Emerging Technology; Jacob Stokes, Center for a New American Security; Nathan Beauchamp-Mustafaga, RAND Corporation; Edward Parker, RAND Corporation; Ngor Luong, Center for Security and Emerging Technology; Michelle Rozo, National Security Commission on Emerging Biotechnology; Jeffrey Nadaner, Govini; Christoph Hebeisen,* Lookout.

March 1, 2024: Public Hearing on "Consumer Products from China: Safety, Regulations, and Supply Chains" Washington, DC

Commissioners present: Robin Cleveland, Chairman (Hearing Co-Chair); Aaron Friedberg; Kimberly T. Glas (Hearing Co-Chair); Leland R. Miller; Reva Price, Vice Chair; Hon. Randall Schriver; Cliff Sims; Michael R. Wessel.

Witnesses: James Joholske, U.S. Consumer Product Safety Commission; Teresa Murray, U.S. Public Interest Research Group; Daniel Shapiro, Red Points; Dan Harris, Harris Sliwoski LLP; Edmund Malesky, Duke University; Rebecca Ray, Boston University Global Development Policy Center; Elizabeth Drake, Schagrin Associates; Gordon Hanson, Harvard Kennedy School; François Chimits, Mercator Institute for China Studies and Centre d'Etudes Prospectives et d'Informations Internationales; Adam Wolfe, Absolute Strategy Research.

*Did not appear in person but submitted material for the record.

March 21, 2024: Public Hearing on "China's Evolving Counter Intervention Capabilities and Implications for the United States and Indo-Pacific Allies and Partners" Washington, DC

Commissioners present: Robin Cleveland, Chairman; Aaron Friedberg; Kimberly T. Glas; Jacob Helberg; Leland R. Miller; Reva Price, Vice Chair (Hearing Co-Chair); Hon. Randall Schriver (Hearing Co-Chair); Cliffs Sims; Hon. Jonathan N. Stivers; Michael R. Wessel.

Witnesses: Thomas Shugart, Center for a New American Security; J. Michael Dahm, Mitchell Institute for Aerospace Studies; Cristina Garafola, RAND Corporation; Maryanne Kivlehan-Wise, Center for Naval Analyses; Christopher Johnstone, Center for Strategic and International Studies; Caitlin Lee, RAND Corporation; Tetsuo Kotani, Meikai University and Japan Institute of International Affairs; Edcel Ibarra, University of the Philippines Diliman; Bec Shrimpton, Australian Strategic Policy Institute.

April 19, 2024: Public Hearing on "China and the Middle East" Washington, DC

Commissioners present: Robin Cleveland, Chairman; Aaron Friedberg (Hearing Co-Chair); Kimberly T. Glas; Jacob Helberg; Leland R. Miller; Reva Price, Vice Chair; Hon. Randall Schriver; Cliff Sims; Hon. Jonathan N. Stivers (Hearing Co-Chair).

Witnesses: Erica Downs, Center on Global Energy Policy at Columbia University; Mohammed Soliman, Middle East Institute; Karen Young, Center on Global Energy Policy at Columbia University; Jonathan Fulton, Atlantic Council; Jon Alterman, Center for Strategic and International Studies; Dawn Murphy, U.S. National War College; Grant Rumley, Washington Institute for Near East Policy; Maria Papageorgiou, University of Exeter; Alessandro Arduino, King's College London.

May 23, 2024: Public Hearing on "Key Economic Strategies for Leveling the U.S.-China Playing Field: Trade, Investment, and Technology" Washington, DC

Commissioners present: Robin Cleveland, Chairman; Aaron Friedberg; Kimberly T. Glas; Jacob Helberg; Michael Kuiken; Leland R. Miller (Hearing Co-Chair); Reva Price, Vice Chair; Hon. Randall Schriver; Cliff Sims; Hon. Jonathan N. Stivers; Michael R. Wessel (Hearing Co-Chair).

Witnesses: Jamieson Greer, King & Spalding LLP; Mary Lovely, Peterson Institute for International Economics; Davin Chor, Tuck School of Business at Dartmouth College; Kevin Wolf, Akin; Giovanna Cinelli, National Security Institute at George Mason University; Peter Harrell, Carnegie Endowment for International Peace; Derek Scissors, American Enterprise Institute; Emily Kilcrease, Center for a New American Security; Deborah Elms, Hinrich Foundation; Pepe Zhang, Atlantic Council; Julia Friedlander, Atlantik-Brücke; Sarah Bauerle Danzman,* Indiana University Bloomington.

*Did not appear in person but submitted material for the record.

June 13, 2024: Public Hearing on
"China's Stockpiling and Mobilization Measures for Competition and Conflict"
Washington, DC

Commissioners present: Robin Cleveland, Chairman; Aaron Friedberg; Kimberly T. Glas; Hon. Carte P. Goodwin (Hearing Co-Chair); Jacob Helberg; Michael Kuiken; Leland R. Miller; Reva Price, Vice Chair; Hon. Randall Schriver; Cliff Sims (Hearing Co-Chair); Michael R. Wessel.

Witnesses: Manoj Kewalramani, Takshashila Institution; Katja Drinhausen, Mercator Institute for China Studies; Lauri Paltemaa, University of Turku; Gustavo Ferreira, U.S. Department of Agriculture; Gabriel Collins, Baker Institute; Zongyuan Zoe Liu, Council on Foreign Relations; Timothy Heath, RAND Corporation; Devin Thorne, Recorded Future; Gregory Wischer,* Dei Gratia Minerals.

*Did not appear in person but submitted material for the record.

APPENDIX IIIA

LIST OF WITNESSES TESTIFYING BEFORE THE COMMISSION

2024 Hearings

Full transcripts and written testimonies are available online at the Commission's website: *www.USCC.gov*.

Alphabetical Listing of Witnesses Testifying before the Commission

Witness Name	Witness Affiliation	Hearing Date
Alterman, Jon	Center for Strategic and International Studies	April 19, 2024
Arduino, Alessandro	King's College London	April 19, 2024
Bauerle Danzman, Sarah*	Indiana University Bloomington	May 23, 2024
Beauchamp-Mustafaga, Nathan	RAND Corporation	February 1, 2024
Chimits, François	Mercator Institute for China Studies and Centre d'Etudes Prospectives et d'Informations Internationales	March 1, 2024
Chor, Davin	Tuck School of Business at Dartmouth College	May 23, 2024
Cinelli, Giovanna	National Security Institute at George Mason University	May 23, 2024
Collins, Gabriel	Baker Institute	June 13, 2024
Corrigan, Jack	Center for Security and Emerging Technology	February 1, 2024
Dahm, J. Michael	Mitchell Institute for Aerospace Studies	March 21, 2024
Downs, Erica	Center on Global Energy Policy at Columbia University	April 19, 2024
Drake, Elizabeth	Schagrin Associates	March 1, 2024
Drinhausen, Katja	Mercator Institute for China Studies	June 13, 2024

*Did not attend in person but submitted material for the record

Alphabetical Listing of Witnesses Testifying before the Commission—*Continued*

Witness Name	Witness Affiliation	Hearing Date
Elms, Deborah	Hinrich Foundation	May 23, 2024
Ferreira, Gustavo	U.S. Department of Agriculture	June 13, 2024
Friedlander, Julia	Atlantik-Brücke	May 23, 2024
Fulton, Jonathan	Atlantic Council	April 19, 2024
Garafola, Cristina	RAND Corporation	March 21, 2024
Greer, Jamieson	King & Spalding LLP	May 23, 2024
Hanson, Gordon	Harvard Kennedy School	March 1, 2024
Harrell, Peter	Carnegie Endowment for International Peace	May 23, 2024
Harris, Dan	Harris Sliwoski LLP	March 1, 2024
Heath, Timothy	RAND Corporation	June 13, 2024
Hebeisen, Christoph*	Lookout	February 1, 2024
Ibarra, Edcel	University of the Philippines Diliman	March 21, 2024
Johnstone, Christopher	Center for Strategic and International Studies	March 21, 2024
Joholske, James	U.S. Consumer Product Safety Commission	March 1, 2024
Kewalramani, Manoj	Takshashila Institution	June 13, 2024
Kilcrease, Emily	Center for a New American Security	May 23, 2024
Kivlehan-Wise, Maryanne	Center for Naval Analyses	March 21, 2024
Kotani, Tetsuo	Meikai University and Japan Institute of International Affairs	March 21, 2024
Lee, Caitlin	RAND Corporation	March 21, 2024
Liu, Zongyuan Zoe	Council on Foreign Relations	June 13, 2024
Lovely, Mary	Peterson Institute for International Economics	May 23, 2024
Luong, Ngor	Center for Security and Emerging Technology	February 1, 2024
Malesky, Edmund	Duke University	March 1, 2024
Murphy, Dawn	U.S. National War College	April 19, 2024
Murray, Teresa	U.S. Public Interest Research Group	March 1, 2024

*Did not attend in person but submitted material for the record

Alphabetical Listing of Witnesses Testifying before the Commission—*Continued*

Witness Name	Witness Affiliation	Hearing Date
Nadaner, Jeffrey	Govini	February 1, 2024
Nikakhtar, Nazak	Wiley Rein LLP	February 1, 2024
Paltemaa, Lauri	University of Turku	June 13, 2024
Papageorgiou, Maria	University of Exeter	April 19, 2024
Parker, Edward	RAND Corporation	February 1, 2024
Ray, Rebecca	Boston University Global Development Policy Center	March 1, 2024
Rozo, Michelle	National Security Commission on Emerging Biotechnology	February 1, 2024
Rumley, Grant	Washington Institute for Near East Policy	April 19, 2024
Scissors, Derek	American Enterprise Institute	May 23, 2024
Shapiro, Daniel	Red Points	March 1, 2024
Shrimpton, Bec	Australian Strategic Policy Institute	March 21, 2024
Shugart, Thomas	Center for a New American Security	March 21, 2024
Soliman, Mohammed	Middle East Institute	April 19, 2024
Stokes, Jacob	Center for a New American Security	February 1, 2024
Thorne, Devin	Recorded Future	June 13, 2024
Tsarynny, Ivan	Feroot Security	February 1, 2024
Wischer, Gregory*	Dei Gratia Minerals	June 13, 2024
Wolf, Kevin	Akin	May 23, 2024
Wolfe, Adam	Absolute Strategy Research	March 1, 2024
Young, Karen	Center on Global Energy Policy at Columbia University	April 19, 2024
Zhang, Pepe	Atlantic Council	May 23, 2024

*Did not attend in person but submitted material for the record

APPENDIX IV
LIST OF RESEARCH MATERIAL

Contracted and Staff Research Reports Released in Support of the 2024 Annual Report

Disclaimer

The reports listed in this appendix were prepared at the request of the Commission to supports its deliberations. They have been posted to the Commission's website to promote greater public understanding of the issues addressed by the Commission in its ongoing assessment of U.S.-China economic relations and their implications for U.S. national security, as mandated by Public Law No. 106–398, and amended by Public Laws No. 107–67, No. 108–7, No. 109–108, No. 110–161, No. 113–291, and No. 117–286. The posting of these reports to the Commission's website does not imply an endorsement by the Commission or any individual Commissioner of the views or conclusions expressed therein.

Contracted Reports

Censorship Practices of the People's Republic of China
Prepared for the Commission by Kieran Green, Andrew Sprott, Ed Francis, Dr. Brian Lafferty, Hartley Wise, Molly Henry, Grace Faerber, and Frank Miller
Exovera
February 2024
https://www.uscc.gov/research/censorship-practices-peoples-republic-china

Staff Research Reports, Issue Briefs, and Backgrounders

Humanoid Robots
October 2024
https://www.uscc.gov/research/humanoid-robots

China's Foreign Missions in the United States
Written by former Policy Analyst Lauren (Greenwood) Menon and Congressional Liaison Jonathan Roberts
July 2024
https://www.uscc.gov/research/chinas-foreign-missions-united-states

China's Position on Russia's Invasion of Ukraine
April 2022 to April 2024 (Periodically updated)
https://www.uscc.gov/research/chinas-position-russias-invasion-ukraine

PRC in International Organizations
November 2023 and February 2024 (Periodically updated)
https://www.uscc.gov/research/prc-international-organizations

Chinese Companies Listed on Major U.S. Stock Exchanges
January 2024 (Periodically updated)
https://www.uscc.gov/research/chinese-companies-listed-major-us-stock-exchanges

Women in China's Leadership
Written by Director of Research and Policy Analyst Sierra Janik, Policy Analyst Nicole Morgret, Policy Analyst Daniel Blaugher, and former Director Jonathan Ray
December 2023 (Update)
https://www.uscc.gov/research/women-chinas-leadership

China's Global Police State: Background and U.S. Policy Implications
Written by Policy Fellow Andrew Hartnett, Policy Analyst Nicole Morgret, and Senior Policy Analyst Rachael Burton
December 2023
https://www.uscc.gov/research/chinas-global-police-state-background-and-us-policy-implications

APPENDIX V

CONFLICT OF INTEREST AND LOBBYING DISCLOSURE REPORTING

The Commission seeks to hold itself to the highest standards of transparency in carrying out its mission. In accordance with its policy for avoiding conflicts of interest, Commissioners who believe they have an actual or perceived conflict of interest must recuse themselves from the source or subject matter of the conflict. The following Commissioners recused themselves from the portions of the 2024 Report cycle below.

- Commissioner Jonathan N. Stivers recused himself from Commission activities that include the direct participation of the Committee for Freedom in Hong Kong (CFHK) Foundation, including a Commission briefing relating to Hong Kong which included an employee of the CFHK Foundation.
- Commissioner Michael R. Wessel recused himself from Commission activities relating to the following two matters: the trade remedy cases involving certain solar imports from Cambodia, Malaysia, Thailand, and Vietnam filed in April 2024 and the Section 301 case relating to shipbuilding sectors filed March 2024.

Lobbying disclosure reports filed by any Commissioners who engage in "lobbying activities" as defined by the Lobbying Disclosure Act in connection with their outside employment activities may be accessed via public databases maintained by the House (*https://lobbyingdisclosure.house.gov/*) and Senate (*https://lda.senate.gov/system/public/*).

APPENDIX VI

ACRONYMS AND ABBREVIATIONS

A2/AD	Anti-Access/Area Denial
ABO	access, basing, and overflight
ACD	Archipelagic Coastal Defense
ACE	Agile Combat Employment
AD/CVD	antidumping and countervailing duty
ADB	Asian Development Bank
ADF	Australian Defense Force
ADIZ	air defense identification zone
AECA	Arms Export Control Act
AECC	Aero Engine Corporation of China
AES	Advanced Encryption Standard
AEW&C	airborne early warning and control
AI	artificial intelligence
AmCham	American Chamber of Commerce
ANPRM	Advance Notice of Proposed Rulemaking
ANZUS	Australia, New Zealand, and the United States
ARATS	Association for Relations Across the Taiwan Straits
ARM	anti-radiation missile
ASBM	anti-ship ballistic missile
ASD's ACSC	Australian Signals Directorate's Australian Cyber Security Centre
ASEAN	Association of Southeast Asian Nations
ASPI	Australian Strategic Policy Institute
ASW	anti-submarine warfare
AUD	Australian dollars
AUKUS	Australia, United Kingdom, United States
AVIC	Aviation Industry Corporation of China
bcm	billion cubic meters
BEA	U.S. Bureau of Economic Analysis
BESS	battery energy storage system
BfV	German Federal Office for the Protection of the Constitution
BIO	Biotechnology Innovation Organization
BIS	Bureau of Industry and Security
BND	German Federal Intelligence Service
BNO	British National Overseas
BRI	Belt and Road Initiative
BRICS	Brazil, Russia, India, China, South Africa
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CAA	Civil Aeronautics Administration
CAAC	Civil Aviation Administration of China

CAC	Cyberspace Administration of China
CAICT	Chinese Academy of Information and Communications Technology
CANN	Compute Architecture for Neural Networks
CASCF	China-Arab States Cooperation Forum
CATL	Contemporary Amperex Technology Co., Ltd
CBDC	Central Bank Digital Currency
CBP	U.S. Customs and Border Protection
CCDI	Central Commission for Discipline Inspection
CCG	China Coast Guard
CCP	Chinese Communist Party
CDMO	contract development and manufacturing organization
CDS	Cross Domain Solutions
CEE	Central and Eastern Europe
CELAC	Community of Latin American and Caribbean States
CFHK	Committee for Freedom in Hong Kong
CGA	Coast Guard Administration (Taiwan)
China-CELAC	China-Community of Latin American and Caribbean States
CHIPS	Clearing House Interbank Payments System
CHPL	Common High Priority List
CICIR	China Institutes of Contemporary International Relations
CIPS	Cross-Border Interbank Payments System
CISA	U.S. Cybersecurity and Infrastructure Security Agency
CMC	Central Military Commission
CMO	contract manufacturing organization
CNA	Central News Agency (Taiwan)
CNC	Computer Numerically Controlled
CNH	RMB for offshore market outside mainland China
CNPC	China National Petroleum Corporation
CNSC	Central National Security Commission
CNY	RMB for onshore market in mainland China
COFA	Compact of Free Association
COMAC	Commercial Aircraft Corporation of China, Ltd.
CONUS	Continental United States
CPI	consumer price index
CPIS	Coordinated Portfolio Investment Survey
CPPCC	Chinese People's Political Consultative Conference
CPSC	Consumer Product Safety Commission
CPSIA	Consumer Product Safety Improvement Act
CPTPP	Comprehensive and Progressive Trans-Pacific Partnership
CRDMO	contract research, development, and manufacturing organization
CRO	contract research organization
CSCEC	China State Construction Engineering Corporation
CSET	Center for Strategic and Emerging Technology
CSRC	China Securities Regulatory Commission
CUHK	Chinese University of Hong Kong

DARPA	U.S. Defense Advanced Research Projects Agency
DEWA	Dubai Electricity and Water Authority
DFC	U.S. International Development Finance Corporation
DMO	Distributed Maritime Operations
DOD	U.S. Department of Defense
DPP	Democratic Progressive Party
DSR	Digital Silk Road
EA	electronic attack
EABO	Expeditionary Advanced Base Operations
EAPA	Enforce and Protect Act
EAR	Export Administration Regulations
ECCN	Export Control Classification Number
ECFA	Economic Cooperation Framework Agreement
ECRA	Export Control Reform Act
EDCA	Enhanced Defense Cooperation Agreement
EDWC	Eastern Data Western Computing
EEZ	exclusive economic zone
EO	executive order
EO/IR	electro-optical/infrared
EP	electronic protection
ETF	exchange-traded fund
EU	European Union
EV	electric vehicle
EW	electronic warfare
FAS	Freely Associated States
FBA	Fulfillment by Amazon
FBI	U.S. Federal Bureau of Investigation
FCA	False Claims Act
FCC	Federal Communications Commission
FCS	fire control systems
FDA	Food and Drug Administration
FDI	foreign direct investment
FDPR	Foreign Direct Product Rule
FEOC	Foreign Entity of Concern
FIE	foreign-invested enterprise
FIRRMA	Foreign Investment Risk Review Modernization Act
FLOP	floating point operation
FMF	foreign military financing
FMS	Foreign Military Sales
FOCAC	Forum on China-Africa Cooperation
FTZ	foreign trade zone
FX	foreign exchange
FY	fiscal year
GAC	General Administration of Customs
GAO	U.S. Government Accountability Office
GBA	Greater Bay Area
GCC	Gulf Cooperation Council
GDP	gross domestic product
GE	genetically engineered
GEA	Global Express Association
GMO	genetically modified organism
GPS	Global Positioning System

GPU	graphic processing unit
GSOMIA	General Security of Military Information Agreement
GW	gigawatt
GWh	gigawatt hour
HF	high frequency
HFNL	Hefei National Laboratory for Physical Sciences at the Microscale
HIMARS	High Mobility Artillery Rocket System
HKD	Hong Kong dollars
HKDC	Hong Kong Democracy Council
HKETO	Hong Kong Economics and Trade Office
HKIC	Hong Kong Investment Corporation
HKJA	Hong Kong Journalists Association
HKMA	Hong Kong Monetary Authority
HTS	Harmonized Tariff System
IC	intelligence community
ICAO	International Civil Aviation Organization
ICTS	information and communications technology and services
IEEPA	International Emergency Economic Powers Act
ILAC-MRA	International Laboratory Accreditation Cooperation-Mutual Recognition Arrangement
IMEC	India-Middle East-Europe Economic Corridor
IMF	International Monetary Fund
IMO	International Maritime Organization
INDSR	Institute for National Defense and Security Research
IP	intellectual property
IPAC	Inter-Parliamentary Alliance on China
IPEF	Indo-Pacific Economic Framework for Prosperity
IPO	initial public offering
IPR	intellectual property rights
IRBM	intermediate-range ballistic missile
ISR	intelligence, surveillance, and reconnaissance
IT	information technology
ITIF	Information Technology and Innovation Foundation
JADC2	Joint All-Domain Command and Control
JJOC	Japan Self-Defense Forces Joint Operations Command
JLSF	Joint Logistics Support Force
JORC	Judicial Officers Recommendation Commission
JTIDS	Joint Tactical Information Distribution System
KMT	Kuomintang
LAT	Lot Acceptance Testing
LEO	low Earth orbit
LGFV	local government financing vehicle
LLM	large language model
LNG	liquified natural gas
LOA	Letter of Offer and Acceptance
LSD	League of Social Democrats
M&A	mergers and acquisitions
MAC	Mainland Affairs Council

MDO	Multi-Domain Operations
MENA	Middle East and North Africa
MIC	Made in China
MIDS-LVT	Multifunctional Information Distribution Systems-Low Volume Terminals
MIIT	Ministry of Industry and Information Technology
MIT	Massachusetts Institute of Technology
MLP	Medium- to Long-Term Program
MND	Ministry of National Defense
MOE	mixed-ownership enterprise
MOF	Ministry of Finance
MOFCOM	Ministry of Commerce
MOU	memorandum of understanding
MRLS	Multiple Rocket Launch System
MSS	Ministry of State Security
MTCR	Missile Technology Control Regime
MW	megawatt
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
NCSC-UK	United Kingdom National Cyber Security Centre
NCSIST	National Chung-Shan Institute of Science and Technology
NDA	National Data Administration
NDAA	National Defense Authorization Act
NDM	National Defense Mobilization
NDMC	National Defense Mobilization Commission
NDTL	National Defense Transportation Law
NEA	National Energy Administration
NETF	Naval Escort Task Force
NGO	nongovernmental organization
NICPN	nationally integrated computing power network
NIS	Republic of Korea's National Intelligence Service
NISC	Japan's National Center of Incident Readiness and Strategy for Cybersecurity
NOV	Notice of Violation
NPA	Japan's National Police Agency
NPC	National People's Congress
NPL	non-performing loan
NPRM	Notice of Proposed Rulemaking
NSA	U.S. National Security Agency
NSL	National Security Law
NSP	New Southbound Policy
NSS	National Security Strategy
NTD	New Taiwan dollar
NTESS	new-type energy storage system
NYSE	New York Stock Exchange
OCONUS	Outside the Continental United States
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
OODA	observe-orient-decide-act
OS	operating system
OTC	over-the-counter

OTH	over-the-horizon
PACER	publicly available electronic docket
PAP	People's Armed Police
PBOC	People's Bank of China
PCAOB	Public Company Accounting Oversight Board
PCT	Patent Cooperation Treaty
PDA	Presidential Drawdown Authority
PGII	Partnership for Global Infrastructure and Investment
PIF	Public Investment Fund
PILS	Pneumatic Integrated Launch Systems
PLA	People's Liberation Army
POW	prisoner of war
PRC	People's Republic of China
PV	photovoltaic
QC	quality control
QED-C	Quantum Economic Development Consortium
QIS	quantum information science
QKD	quantum key distribution
R&D	research and development
RFA	Radio Free Asia
RMB	renminbi
ROC	Republic of China
ROK	Republic of Korea
RSA	Rivest-Shamir Adleman (algorithm)
RSF	Reporters Without Borders
SAMR	State Administration for Market Regulation
SAR	synthetic aperture radar
SAR	Special Administrative Region
SASAC	State-Owned Assets Supervision and Administration Commission of the State Council
SCMP	South China Morning Post
SCO	Shanghai Cooperation Organization
SDN	Specially Designated Nationals
SDR	Special Drawing Rights
SEF	Straits Exchange Foundation
SHIP	Stop Harboring Iranian Petroleum
SIGINT	signals intelligence
SMIC	Semiconductor Manufacturing International Corporation
SOE	state-owned enterprise
SOFA	Status of United States Forces in Australia
SOPA	Society of Publishers in Asia
SPR	Strategic Petroleum Reserve
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TEDA	Tianjin Economic-Technological Development Area
TEU	twenty-foot equivalent unit
TIC	Treasury International Capital
TPP	Taiwan People's Party
TSMC	Taiwan Semiconductor Manufacturing Company
TTC	U.S.-EU Trade and Technology Council
TWh	terawatt hour

TWSE	Taiwan Stock Exchange
U.S.	United States
UAE	United Arab Emirates
UAS	unmanned aerial system
UAV	unmanned aerial vehicle
UBO	ultimate beneficial owner
UFLPA	Uyghur Forced Labor Prevention Act
UHF	ultra-high frequency
UHV	ultra-high vacuum
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNIFIL	United Nations Interim Force in Lebanon
UNSC	United Nations Security Council
UNTSO	United Nations Truce Supervision Organization
USDA	U.S. Department of Agriculture
USFJ	U.S. Forces Japan
USITC	U.S. International Trade Commission
USMCA	United States-Mexico-Canada Agreement
USTR	Office of the U.S. Trade Representative
UUV	uncrewed underwater vehicle
VAT	value-added tax
VC	venture capital
VFA	Visiting Forces Agreement
VHF	very-high frequency
VIE	variable interest entity
WTO	World Trade Organization
XUAR	Xinjiang Uyghur Autonomous Region
YMTC	Yangtze Memory Technologies Corp

2024 COMMISSION STAFF

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CINDY ZHENG, *Policy Analyst, Security and Foreign Affairs*

ACKNOWLEDGEMENTS

The Commission would like to express its deep appreciation to those who testified as expert witnesses, the researchers and analysts who prepared papers under contract, and the representatives from the executive branch and others who briefed the Commissioners on a wide array of economic and security issues. All of these efforts informed the Commission and the public debates on issues vital to ongoing U.S.-China relations.

The Commission offers it special thanks to General Michael E. Kurilla, U.S. Central Command; General Bryan P. Fenton, U.S. Special Operations Command; then Acting Director Jeremy Cornforth, American Institute in Taiwan; then Deputy Chief of Mission Raymond F. Greene, U.S. Embassy in Tokyo; and Admiral Samuel J. Paparo, U.S. Indo-Pacific Command, and their staffs for their outstanding support of the Commission's fact-finding trips this year.

The Commissioners are deeply grateful to the service and expertise of the staff who develop materials for our hearings, research papers, and Annual Report. Each person brings a unique perspective, expertise, and dedication to the Commission and country, which every Commissioner has benefited from as we seek to understand U.S. relations with China. We are also grateful to the congressional and administrative teams, which offer experienced and capable support ensuring the Commission's hearings, congressional engagement, and daily operations run smoothly.

Finally, the Commissioners express their thanks to Erin Mulligan, who served as a copyeditor of the Report, to Tyler Loveless, who served as a fact-checker of the Report, to former Security and Foreign Affairs Director Anastasya Lloyd-Damnjanovic, and to former staffers Andrew Hartnett, Nicholas Kaufman, Lauren Menon, and Aubrey Waddick who each made significant contributions to the 2024 Report cycle. The Commissioners are especially grateful to former executive director Daniel W. Peck for his leadership of the Commission's staff (2018–2024).