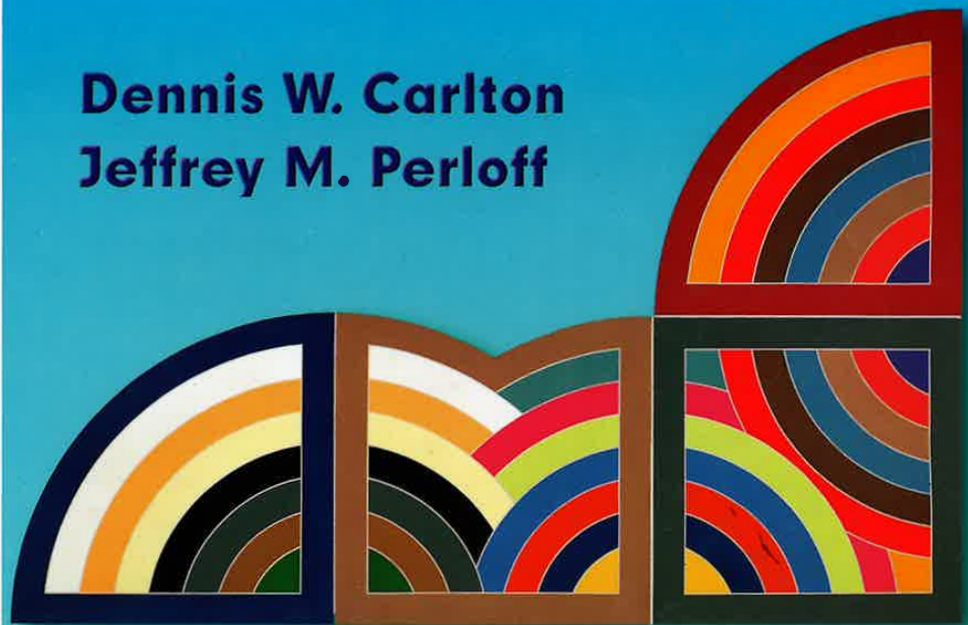


Modern Industrial Organization

Fourth Edition

Dennis W. Carlton
Jeffrey M. Perloff



To Janie and Jackie

Editor in Chief: Denise Clinton
Acquisitions Editor: Adrienne D'Ambrosio
Director of Development: Sylvia Mallory
Managing Editor: Jim Rigney
Senior Production Supervisor: Nancy Fenton
Senior Media Producer: Melissa Honig
Marketing Manager: Deborah Meredith
Design Supervisor: Regina Kolenda
Interior Designer: Leslie Haimes
Cover Designer: Leslie Haimes
Illustrator: Jim McLaughlin
Senior Prepress Supervisor: Caroline Fell
Senior Manufacturing Buyer: Hugh Crawford
Compositor: Nesbitt Graphics, Inc.
Cover Image: Stella, Frank (b. 1936) © Copyright ARS, NY. Agbatana II. 1968. Polymer and fluorescent polymer paint on canvas. 10' × 15'. © Copyright ARS, NY. Musee d'Art et d'Industrie, Saint-Etienne. Photo credit: Giraudon

Many of the designations used by manufacturers and sellers to distinguish their products are claimed as trademarks. Where those designations appear in this book and Addison-Wesley is aware of a trademark claim, the designations have been printed in initial caps or all caps.

Library of Congress Cataloging-in-Publication Data

Carlton, Dennis W.

Modern industrial organization / Dennis W. Carlton, Jeffrey M. Perloff.—
4th ed.

p. cm

Includes bibliographical references and index.

ISBN 0-321-18023-2

1. Industrial organization (Economic theory) I. Perloff, Jeffrey M. II.

Title

HD2326.C376 2005

338.6—dc22

2004007014

Copyright © 2005 by Dennis W. Carlton and Jeffrey M. Perloff

All rights reserved. No part of this publication may be reproduced, stored in a database or retrieval system, distributed, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. Printed in the United States of America.

6 7 8 9 10—CRW— 09

the theory and evidence concerning economies of scale and concludes with a discussion of costs for a multiproduct firm.

The key issues we study in this chapter are:

1. Most firms maximize profits.
2. Acquisitions and other mergers may (but do not always) force firms to operate efficiently and profitably.
3. Economists use the concept of an opportunity cost that includes a normal profit.
4. The costs of a single-product firm depend on the prices of factors of production and the output level.
5. A multiproduct firm's cost of producing a single product depends on factor prices, the output level of that product, and the output level of its other products.
6. Production processes may have various properties such as economies of scale and economies of scope.

The Firm

Most goods and services produced in Western countries are produced by firms. In the United States, firms produce 84 percent of national production, the government produces 11 percent, nonprofit institutions (such as some universities and hospitals) produce 5 percent, and private households produce less than 0.1 percent.¹ In contrast, the government's share of total national production can be much higher in developing countries, reaching 43 percent in Ethiopia, 44 percent in Kyrgyzstan, 46 percent in Yemen, and 59 percent in Lesotho, though it is less than 5 percent in Guinea, Ireland, and Luxembourg (Heston et al., 2002). We now examine the objective, organization, and ownership of firms.

The Objective of a Firm

Most firms are *for-profit* firms: They exist to make money. Unless we state otherwise, when we refer to a firm we mean a for-profit firm and not a firm that exists for charitable or other nonprofit reasons.

The standard assumption in most economic models is that the primary objective of a manager of a firm is to maximize the firm's profits. The manager must sell the optimal amount of output, and the firm engages in **efficient production**: No more output could be produced with existing technology, given the quantity of inputs used.

¹These are shares of the U.S. gross domestic product for 2002 from the U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Products Accounts Table 1.7, Gross Domestic Product by Sector (www.bea.doc.gov/bea/dn/nipaweb). These figures exclude nonmarketed output of private households such as meal production.