

10E

MANAGERIAL ECONOMICS

MARK HIRSCHHEY

TENTH EDITION

Managerial Economics

Mark Hirschey

University of Kansas

THOMSON
— ★ —
SOUTH-WESTERN

Australia • Canada • Mexico • Singapore • Spain • United Kingdom • United States



Managerial Economics, 10e
Mark Hirschey

Editor-in-Chief:
Jack Calhoun

VP, Team Director:
Michael P. Roche

Sr. Acquisitions Editor:
Peter Adams

Publisher of Economics:
Michael B. Mercier

Sr. Developmental Editor:
Jan Lamar

Sr. Production Editor:
Elizabeth A. Shipp

**Executive Marketing
Manager:**
Lisa L. Lysne

Media Technology Editor:
Vicky True

**Media Developmental
Editor:**
Peggy Buskey

Media Production Editor:
Pam Wallace

**Manufacturing
Coordinator:**
Sandy Milewski

Internal Designer:
Rik Moore

Cover Designer:
Rik Moore

Cover Photograph:
© Photo Disc, Inc.

Production House:
Rebecca Gray Design

Printer:
Quebecor World Versailles

COPYRIGHT © 2003 by
South-Western, a division
of Thomson Learning.
Thomson Learning™ is a
trademark used herein
under license.

ISBN: 0-324-18330-5

Printed in the United
States of America
3 4 5 06 05 04

For more information
contact South-Western,
5191 Natorp Boulevard,
Mason, Ohio 45040.
Or you can visit our
Internet site at:
<http://www.swlearning.com>

ALL RIGHTS RESERVED.
No part of this work covered
by the copyright hereon may
be reproduced or used in any
form or by any means—graphic,
electronic, or mechanical,
including photocopying,
recording, taping, Web
distribution or information
storage and retrieval
systems—without the written
permission of the publisher.

For permission to use material
from this text or product,
submit a request online at
<http://www.thomsonrights.com>.
Any additional questions about
permissions can be submitted
by email to
thomsonrights@thomson.com.

Library of Congress Control
Number: 2002021600

Preface

Over the past 30 years, managerial economics has grown from a core course requirement in MBA and advanced undergraduate programs to emerge as an important branch of applied economics. The role of managers in corporations, not-for-profit institutions, and government agencies has become even more important, and the need to improve resource use in all types of organizations has become much more visible. The information age of the new millennium has put so much more data at the disposal of managers that “information overload” and the “paralysis of analysis” have become common complaints. Widespread volatility in input prices and availability, the rapid pace of technical change, plus ongoing globalization of the marketplace all combine to make difficult the efficient use of economic resources and information. Dynamic change in the economic environment also makes it difficult to accurately assess demand and supply conditions, as it increases the need for timely and effective managerial decision making. Sound economic analysis has never been more important—regardless of whether the decision-making unit is an individual, household, firm, nonprofit organization, or government agency.

A key feature of this text is its depiction of the firm as a cohesive, unified organization. The basic valuation model is constructed and used as the underlying economic model of the firm. Each topic in the text is then related to an element of the value maximization model. In this manner, effective management is seen to involve an integration of the accounting, finance, marketing, personnel, and production functions. This integrative approach demonstrates that important managerial decisions are *interdisciplinary* in the truest sense of the word. Over the years, I have come to appreciate that students find the presentation of the business firm as a unified whole, rather than a series of discrete, unrelated parts, as one of the most valuable lessons of managerial economics.

Although both microeconomic and macroeconomic relations have implications for managerial decision making, this text concentrates on microeconomic topics of particular importance. Following the development of the economic model of the firm, the vital role of profits is examined. Because the decision-making process often requires an elementary understanding of economic and statistical relations, a number of basic economic relations, statistical concepts, and optimization techniques are described early in the text. Because the demand for a firm’s products plays a major role in determining its profitability and ongoing success, demand analysis and estimation is an essential area of study. An important part of this investigation is a study of the basic forces of demand and supply. This naturally leads to a discussion of economic forecasting and methods for assessing forecast reliability. Production theory, cost analysis, and linear programming techniques are then explored as means for understanding the economics of resource allocation and employment.

Another important topic is market structure analysis, which provides a foundation for studying the external economic environment and for examining the pricing practices needed for successful management. The role of government in the market economy, including the con-

straints it imposes on business, requires a careful examination of regulation and antitrust law. Given the government's increasing role in the demand and supply for basic services, such as education and health care, a careful consideration of the use of economic principles in public management is also provided. Finally, risk analysis and capital budgeting are shown as methods for introducing marginal analysis into the long-range strategic planning and control process. The risk analysis and capital budgeting process is not only important within firms, hospitals, and other economic organizations; it is also vital to society as a whole because it pertains to the allocation of scarce capital resources.

Managerial Economics, Tenth Edition, takes a practical problem-solving approach to the study of managerial economics. The text focuses on the economics—not the mathematics—of the managerial decision process. When appropriate, quantitative methods and tools are introduced to give greater insight into the technique of economic analysis and to facilitate the practical use of economics in decision situations. However, the emphasis throughout the text is clearly on economic intuition as a practical tool for problem solving.



CHANGES IN THE TENTH EDITION

For 30 years, *Managerial Economics* and *Fundamentals of Managerial Economics* have played an important role in shaping the teaching of managerial economics. Both were published to achieve a simple objective: to help students understand how fundamental economic concepts can be used to understand and improve the managerial decision-making process. Despite sharing this common objective, *Managerial Economics* and *Fundamentals of Managerial Economics* use slightly different methods. *Managerial Economics* features an intuitive calculus-based treatment of economic theory and analysis, whereas *Fundamentals of Managerial Economics* uses an intuitive noncalculus-based approach.

Students and instructors will find that *Managerial Economics*, Tenth Edition, provides an efficient calculus-based introduction and guide to the optimization process. Chapter 2, "Economic Optimization," illustrates how the concept of a derivative can be used as a practical tool to understand and apply marginal analysis. "Multivariate Optimization and the Lagrangian Technique," Appendix 2A at the end of Chapter 2, examines the process of optimization for equations with three or more variables. Such techniques are especially helpful when managers face constrained optimization problems, or decision situations with limited alternatives. Throughout the text, a wide variety of problems describing real-world decisions can be solved using such techniques.

Like *Fundamentals of Managerial Economics*, students and instructors will find that *Managerial Economics*, Tenth Edition, provides an intuitive guide to marginal analysis and basic economic relations. Although differential calculus is an obviously helpful tool for understanding the process of economic optimization, it is important that students not let mathematical manipulation get in the way of their basic grasp of economic concepts. The concept of a marginal can also be described graphically in an intuitive noncalculus-based approach. Once students learn to grasp the importance of marginal revenue and marginal cost concepts, the process of economic optimization becomes intuitively obvious. Although those using a noncalculus-based approach can safely skip parts of Chapter 2 and Appendix 2A, all other material is fully and completely assessable. With repeat practice using a wide variety of problems and examples throughout the text, all students are able to gain a simple, practical understanding of how economics can be used to improve managerial decisions.

Students and instructors will find that *Managerial Economics*, Tenth Edition, uses a wide variety of examples and simple numerical problems to illustrate the application of managerial economics in practical situations. The nature of the decision process and the role that economic analysis plays are emphasized throughout. This is no "cut and paste" job. *Managerial Economics*,

Tenth Edition, has been thoroughly rewritten to give students and their instructors the option to adopt a calculus-based approach for learning how to apply economic reasoning to understand and improve managerial decisions. In preparation for *Managerial Economics*, Tenth Edition, I've used both calculus-based and noncalculus-based approaches in my own MBA classes. Both work.

Of course, the environment in which managerial decisions are made is constantly changing. To maintain its value as an educational resource, a textbook must be modified and updated. This revision of *Managerial Economics* contains a number of important additions and refinements. Every chapter has been updated in response to valuable suggestions provided by students and instructors and to reflect recent developments in the field. The following section highlights some of most important changes.

Content

- Chapter 2, "Economic Optimization," illustrates how the concept of a derivative can be used as a practical tool to understand and apply marginal analysis. A new Appendix 2A, "Multivariate Optimization and the Lagrangian Technique," examines the process of optimization for equations with three or more variables.
- Chapter 4, "Demand Analysis," has been expanded to include a discussion of utility theory as a basis for demand analysis, including income and substitution effects.
- Chapter 5, "Demand Estimation," has been greatly simplified to focus on the intuitive appeal of elasticity analysis and to better illustrate the use of real-world data in the regression-based approach to demand estimation.
- Chapter 6, "Forecasting," has been simplified to bring focus on the comparative strengths and weaknesses of alternative forecasting techniques. Important strengths and limitations of macroeconomic and microeconomic forecasting techniques are stressed.
- Chapter 7, "Production Analysis and Compensation Policy," has been revised and expanded to clarify how marginal analysis forms the basis for human resource management.
- Chapter 10, "Perfect Competition and Monopoly," and Chapter 11, "Monopolistic Competition and Oligopoly," have been extensively revised to better illustrate the use of economic methodology and game theory to devise and execute an effective competitive strategy in light of market structure considerations. Recent changes in economic census information and market structure measurement are also emphasized.
- Chapter 12, "Pricing Practices," has been revised to improve upon the explanation of essential elements of markup pricing policies and transfer pricing principles.
- Chapter 13, "Regulation of the Market Economy," has undergone comprehensive revision to offer perspective on recent moves to deregulate and re-regulate various types of private-market activity. Added perspective on the size-efficiency issue is provided by considering the link between firm size and profitability for both U.S. and global competitors.
- Chapter 14, "Risk Analysis," has been revised to better explain the wide variety of business risks and the special risks borne by firms with multinational operations. The use of game theory to aid in decision making under uncertainty is also more fully examined.
- Chapter 16, "Organization Structure and Corporate Governance," has been expanded to further document the importance of organizational architecture to managerial economics.
- Chapter 17, "Public Management," has been revised and simplified to show how economic principles can be used to understand and improve the allocation of public-sector resources.

Learning Aids

- Each chapter incorporates a wide variety of simple numerical examples and detailed practical illustrations of chapter concepts. These features portray the valuable use and real-world implications of covered material.
- Each chapter now includes *four* “Managerial Applications” boxes to show current examples of how the concepts introduced in managerial economics are actually used in real-world situations. New managerial applications based on articles from the Internet or *The Wall Street Journal* are provided. This feature stimulates student interest and offers a popular basis for classroom discussion.
- The text incorporates several new regression-based illustrations of chapter concepts using actual company data or data adapted from real-world situations. Like all aspects of the text, this material is self-contained and intuitive.
- Effective managers in the new millennium must be sensitive to the special challenges posed by an increasingly global marketplace. To increase student awareness of such issues, the text also features a number of examples, managerial applications, and case studies that relate to global business topics.
- Each chapter has a case study that provides in-depth treatment of chapter concepts. To meet the needs of all instructors and students, many of these case studies are written to allow, but do not require, a computer-based approach. The case study data and detailed solutions are provided to adopters on the textbook support Web site—<http://hirschey.swcollege.com>. (Students can also access the data at the same Web site.) These case studies are especially helpful to instructors who wish to more fully incorporate the use of basic spreadsheet and statistical software in their courses.
- After having been subject to necessary revision and class testing, fully 340 new end-of-chapter questions and problems are provided. Questions are designed to give students the opportunity to grasp basic concepts on an intuitive level and express their understanding in a nonquantitative fashion. Problems cover a wide variety of decision situations and illustrate the role of economic analysis from within a simple numerical framework.
- Each chapter includes *two* self-test problems to show students how economic tools and techniques can be used to solve practical business problems. These self-test problems are a proven study aid that greatly enhances the learning value of end-of-chapter questions and problems.

Ancillary Package

Managerial Economics, Tenth Edition, is supported by the most comprehensive ancillary package available in managerial economics to make teaching and learning the material both easy and enjoyable.

Instructor's Manual The *Instructor's Manual* offers learning suggestions and detailed answers and solutions for all chapter questions and problems. As mentioned previously, the case study data and detailed solutions are provided to adopters on the textbook support Web site—<http://hirschey.swcollege.com>.

Study Guide The *Study Guide* furnishes a detailed line summary of major concepts for each chapter, a brief discussion of important economic relations as they are covered in the text, and an expanded set of 160 solved problems. This completely new edition has undergone extensive

class testing and analysis. Based on the comments of students and instructors alike, this new study guide is highly recommended as a valuable learning resource. If you cannot find the study guide at your bookstore, you can also purchase it by going to the student resource section of the text Web site (<http://hirschey.swcollege.com>). The ISBN for the study guide is 0-324-17158-7.

Test Bank A comprehensive *Test Bank* offers a variety of multiple-choice questions and one-step and multistep problems for every chapter. Full solutions are included, of course. With a selection of over 500 questions and problems, the *Test Bank* is a valuable tool for exam preparation.

ExamView Computerized testing software contains all of the questions in the printed test bank. This program is an easy-to-use test creation software compatible with Microsoft Windows. Instructors can add or edit questions, instructions, and answers, and select questions by previewing them on the screen, selecting them randomly, or selecting them by number. Instructors can also create and administer quizzes online, whether over the Internet, a local area network (LAN), or a wide area network (WAN).

PowerPoint PowerPoint slides are available for use by students as an aid to note-taking and by instructors for enhancing their lectures. They can be downloaded from the text Web site—<http://hirschey.swcollege.com>.

Excel for Economics New to this edition is an interactive software program prepared by Dr. Thomas Palm, Emeritus, Portland State University. This powerful software package is a student's interactive introduction to a revolutionary approach to learning microeconomics. The power of the Excel spreadsheet, on either the PC or the Macintosh platform, is used to present economic models in a live, interactive context. This software is only available for download at the Hirschey Web site—<http://hirschey.swcollege.com>.

IRCD The IRCD (Instructor's Resource CD-ROM) includes an electronic version of the *Instructor's Manual*, *Test Bank*, *ExamView*, and PowerPoint slides.

WebTutor WebTutor is an interactive, Web-based student supplement on BlackBoard or WebCT that harnesses the power of the Internet to deliver innovative learning aids that actively engage students. The instructor can incorporate WebTutor as an integral part of the course, or the students can use it on their own as a study guide. Benefits to students include automatic and immediate feedback from quizzes and exams; interactive, multimedia-rich explanation of concepts; online exercises that reinforce what students have learned; flashcards that include audio support; and greater interaction and involvement through online discussion forums.

InfoTrac *InfoTrac College Edition* is packaged with every new copy of the textbook. It is a fully searchable online university library containing complete articles and their images. This database provides instructors and their students with four months' access to hundreds of scholarly and popular publications—all reliable sources, including magazines, journals, encyclopedias, and newsletters.

Textbook Support Web Site The data and detailed solutions for the case studies included in the textbook are available to adopters at <http://hirschey.swcollege.com>. The data for the case studies is available to students at the same Web site. Instructor and student supplements are also available for download at the Hirschey Web site.

For the latest information about the ancillary package, please contact your local representative and visit the South-Western Web site at <http://www.swcollege.com>.

Acknowledgments

A number of people have aided in the preparation of *Managerial Economics*, Tenth Edition. Helpful suggestions and constructive comments have been received from many instructors and students who have used previous editions. Numerous reviewers have also provided insights and assistance in clarifying difficult material.

The University of Kansas, students, and colleagues have provided a stimulating environment and general intellectual support. I am grateful for their efforts. I am also indebted to the South-Western staff and would like to thank Peter Adams, senior acquisitions editor; Jan Lamar, senior developmental editor; Libby Shipp, senior production editor; Rik Moore, design project manager; and Lisa Lysne, executive marketing manager, for their special efforts. Finally, I want to thank my wife Chris for her encouragement, support, and assistance.

Every effort has been made to minimize errors in the text. However, errors do occasionally slip through despite diligent efforts to provide an error-free package of text and ancillary materials. Readers are invited to correspond with me directly concerning any corrections or other suggestions.

Finally, more than ever before, it is obvious that economic efficiency is an essential ingredient in the successful management of both private-sector and public-sector organizations. Like any dynamic area of study, the field of managerial economics continues to undergo profound change in response to the challenges imposed by a rapidly evolving environment. It is exciting to participate in these developments. I sincerely hope that *Managerial Economics*, Tenth Edition, contributes to a better understanding of the usefulness of economic theory and methodology to managerial practice.

Mark Hirschey
mhirschey@ku.edu
July 2002

ABOUT THE AUTHOR

MARK HIRSCHHEY

Mark Hirschhey, Ph.D. (University of Wisconsin-Madison), is Professor and Stockton Research Fellow in the School of Business at the University of Kansas, where he teaches undergraduate and graduate courses in managerial economics and finance. Professor Hirschhey is president of the Association of Financial Economists and member of several professional organizations. He has published articles in the *American Economic Review*, *Journal of Accounting Research*, *Journal of Business*, *Journal of Business and Economic Statistics*, *Journal of Finance*, *Journal of Financial Economics*, *Journal of Industrial Economics*, *Review of Economics and Statistics*, and other leading academic journals. He is editor of *Advances in Financial Economics* and past editor of *Managerial and Decision Economics*. Professor Hirschhey is also author of *Fundamentals of Managerial Economics* and *Investments: Theory and Applications*.

Contents in Brief

Preface iv

PART 1 OVERVIEW OF MANAGERIAL ECONOMICS 1

- 1 Nature and Scope of Managerial Economics 2
- 2 Economic Optimization 23
- 3 Demand and Supply 65

PART 2 DEMAND ANALYSIS 97

- 4 Demand Analysis 98
- 5 Demand Estimation 143
- 6 Forecasting 183

PART 3 PRODUCTION AND COST ANALYSIS 231

- 7 Production Analysis and Compensation Policy 232
- 8 Cost Analysis and Estimation 281
- 9 Linear Programming 325

PART 4 MARKET STRUCTURE ANALYSIS AND ESTIMATION 377

- 10 Perfect Competition and Monopoly 378
- 11 Monopolistic Competition and Oligopoly 419
- 12 Pricing Practices 471

PART 5 LONG-TERM INVESTMENT DECISIONS 517

- 13 Regulation of the Market Economy 518
- 14 Risk Analysis 564
- 15 Capital Budgeting 606

PART 6 SUMMARY 647

- 16 Organization Structure and Corporate Governance 648
 - 17 Public Management 685
-

Appendix A: Compounding and the Time Value of Money 727

Appendix B: Interest Factor Tables 742

Appendix C: Statistical Tables 750

Selected Check Figures for End-of-Chapter Problems 755

Index 761

Contents

Preface iv

PART 1 OVERVIEW OF MANAGERIAL ECONOMICS 1

1 Nature and Scope of Managerial Economics 2

How Is Managerial Economics Useful? 3

Managerial Application 1.1: Managerial Ethics 4

Theory of the Firm 5

Managerial Application 1.2: The World Is Turning to Capitalism and Democracy 8

Profit Measurement 8

Why Do Profits Vary Among Firms? 11

Role of Business in Society 12

Managerial Application 1.3: The "Tobacco" Issue 13

Managerial Application 1.4: The Internet Revolution 14

Structure of This Text 16

Summary 17

Case Study: Is Coca-Cola the "Perfect" Business? 19

2 Economic Optimization 23

Economic Optimization Process 24

Managerial Application 2.1: Greed Versus Self-Interest 25

Basic Economic Relations 25

Managerial Application 2.2: Does Good Theory Always Work in Practice? 30

Marginals as the Derivatives of Functions 31

Managerial Application 2.3: How Entrepreneurs Shape the Economy 33

Marginal Analysis in Decision Making 34

Managerial Application 2.4: Information Brought Down the Berlin Wall 40

Incremental Concept in Economic Analysis 41

Summary 44

Case Study: A Spreadsheet Approach to Finding the Economic Order Quantity 54

Appendix 2A: Multivariate Optimization and the Lagrangian Technique 56

Constrained Optimization 58

3 Demand and Supply 65

- Basis for Demand 66
- Managerial Application 3.1: How the Internet Affects Demand and Supply 67
- Market Demand Function 67
- Demand Curve 69
- Managerial Application 3.2: ISP Customers Learn About Demand and Supply 72
- Basis for Supply 73
- Market Supply Function 74
- Managerial Application 3.3: The Import Supply Battle in the U.S. Auto Industry 76
- Supply Curve 76
- Managerial Application 3.4: Demand and Supply Conditions for Economists 80
- Market Equilibrium 80
- Summary 86
- Case Study: A Spreadsheet Analysis of Product Demand and Supply Conditions 94

PART 2 DEMAND ANALYSIS 97

4 Demand Analysis 98

- Basis for Consumer Demand 99
- Managerial Application 4.1: Dell's Price War with Itself 102
- Consumer Choice 102
- Managerial Application 4.2: Due Diligence in E-Commerce 107
- Optimal Consumption 109
- Demand Sensitivity Analysis: Elasticity 111
- Managerial Application 4.3: Relationship Marketing 114
- Price Elasticity of Demand 114
- Price Elasticity and Marginal Revenue 118
- Price Elasticity and Optimal Pricing Policy 122
- Managerial Application 4.4: What's in a Name? 127
- Cross-Price Elasticity of Demand 127
- Income Elasticity of Demand 129
- Summary 131
- Case Study: Optimal Level of Advertising 140

5 Demand Estimation 143

- Identification Problem 144
- Managerial Application 5.1: Sampling Technology for TV Advertising 147
- Interview and Experimental Methods 148
- Managerial Application 5.2: Market Experiments on the Web 150
- Regression Analysis 150
- Measures of Regression Model Significance 155
- Managerial Application 5.3: Lies, Damn Lies, and Government Statistics 156
- Managerial Application 5.4: Spreadsheet and Statistical Software for the PC 162
- Measures of Individual Variable Significance 162
- Practical Solutions to Regression Problems 165
- Summary 167
- Case Study: Demand Estimation for Branded Consumer Products 178

6 Forecasting 183

- What Is Economic Forecasting? 184
- Common Types of Forecasting Problems 184
- Managerial Application 6.1: Economic Forecasting: The Art and the Science 187
- Qualitative Analysis 188
- Trend Analysis and Projection 189
- Managerial Application 6.2: The Dire Prediction Business 195
- Business Cycle 195
- Exponential Smoothing Techniques 205
- Managerial Application 6.3: The Stock Market and the Business Cycle 206
- Managerial Application 6.4: How Good Is Your Forecasting Ability? 208
- Econometric Methods 210
- Judging Forecast Reliability 213
- Choosing the Best Forecast Technique 214
- Summary 216
- Case Study: Forecasting Global Performance for a Mickey Mouse Organization 226

PART 3 PRODUCTION AND COST ANALYSIS 231

7 Production Analysis and Compensation Policy 232

- Production Functions 233
- Total, Marginal, and Average Product 235
- Managerial Application 7.1: Total Quality Management 238
- Law of Diminishing Returns to a Factor 239
- Input Combination Choice 241
- Managerial Application 7.2: Are CEOs Overpaid? 245
- Marginal Revenue Product and Optimal Employment 246
- Input Demand Function 249
- Optimal Combination of Multiple Inputs 251
- Managerial Application 7.3: Should We Raise the Minimum Wage? 255
- Optimal Levels of Multiple Inputs 255
- Returns to Scale 257
- Production Function Estimation 259
- Managerial Application 7.4: The Most Productive Companies in America 260
- Productivity Measurement 261
- Summary 265
- Case Study: Productivity Measurement and Enhancement in the Services Sector 274
- Appendix 7A: A Constrained Optimization Approach to Developing the
Optimal Input Combination Relationships 277

8 Cost Analysis and Estimation 281

- What Makes Cost Analysis Difficult? 282
- Opportunity Costs 284
- Managerial Application 8.1: GE's "20-70-10" Plan 285
- Incremental and Sunk Costs in Decision Analysis 285
- Short-Run and Long-Run Costs 286
- Short-Run Cost Curves 288

Managerial Application 8.2: Gaps in GAAP?	289
Long-Run Cost Curves	291
Managerial Application 8.3: What'n Heck Is a FASB?	295
Minimum Efficient Scale	296
Firm Size and Plant Size	297
Managerial Application 8.4: Bigger Isn't Always Better	303
Learning Curves	303
Economies of Scope	306
Cost-Volume-Profit Analysis	307
Summary	313
Case Study: Estimating the Costs of Nursing Care	321

9 Linear Programming 325

Basic Assumptions	326
Managerial Application 9.1: LP: More Than a Visual Approach	327
Production Planning for a Single Product	327
Managerial Application 9.2: LP on the PC!	334
Production Planning for Multiple Products	334
Graphic Specification and Solution	336
Algebraic Specification and Solution	340
Managerial Application 9.3: Internet Message Boards	345
The Dual in Linear Programming	345
Managerial Application 9.4: It's a RIOT on the Internet!	351
Constrained Cost Minimization: Another LP Example	351
Summary	356
Case Study: LP Pension Funding Model	370
Appendix 9A: Rules for Forming the Dual Linear Programming Problem	373

PART 4 MARKET STRUCTURE ANALYSIS AND ESTIMATION 377

10 Perfect Competition and Monopoly 378

Contrast Between Perfect Competition and Monopoly	379
Managerial Application 10.1: Is the Stock Market Perfectly Competitive?	380
Factors That Determine the Level of Competition	380
Perfect Competition	382
Managerial Application 10.2: Is Ticketmaster a Monopoly?	388
Monopoly	390
Managerial Application 10.3: Is This Why They Call It "Hardball"?	394
Countervailing Power: The Monopoly/Monopsony Confrontation	395
Measurement of Business Profit Rates	397
Managerial Application 10.4: Wrigley's Success Formula	400
Link Between Market Structure and Business Profit Rates	400
Competitive Strategy in Perfectly Competitive and Monopoly Markets	403
Summary	407
Case Study: The Profitability Effects of Large Firm Size	416

11 Monopolistic Competition and Oligopoly 419

- Contrast Between Monopolistic Competition and Oligopoly 420
- Monopolistic Competition 421
- Managerial Application 11.1: Intel: Running Fast to Stay in Place 425
- Illustration of Monopolistically Competitive Equilibrium 425
- Oligopoly 428
- Managerial Application 11.2: Government-Guaranteed Oligopoly 434
- Nonprice Competition 434
- Game Theory 438
- Managerial Application 11.3: Dot.com 442
- Market Structure Measurement 442
- Census Measures of Market Concentration 446
- Managerial Application 11.4: Characteristics of Wonderful Businesses 450
- Competitive Strategy in Monopolistic Competition and Oligopoly Markets 451
- Summary 456
- Case Study: The Profitability of Multinational Operations 467

12 Pricing Practices 471

- Markup Pricing 472
- Managerial Application 12.1: 10¢ for a Gallon of Gas in Dayton, Ohio 476
- Markup Pricing and Profit Maximization 476
- Managerial Application 12.2: Why Do Some Price Wars Never Seem to End? 481
- Price Discrimination 481
- Price Discrimination Example 484
- Multiple-Unit Pricing Strategies 488
- Managerial Application 12.3: Do Colleges Price Discriminate? 490
- Multiple-Product Pricing 491
- Managerial Application 12.4: Corn Growers Discover Oil! 495
- Example of Joint Product Pricing 495
- Transfer Pricing 499
- Global Transfer Pricing Example 501
- Riddles in Pricing Practice 505
- Summary 506
- Case Study: Pricing Practices in the Denver, Colorado, Newspaper Market 513

PART 5 LONG-TERM INVESTMENT DECISIONS 517

13 Regulation of the Market Economy 518

- Competition and the Role of Government 519
- Managerial Application 13.1: How Do You Regulate a Global Economy? 521
- Regulatory Response to Incentive Failures 522
- Managerial Application 13.2: The Sotheby's Price-Fixing Scandal 524
- Who Pays the Costs of Regulation? 525
- Regulatory Response to Structural Failures 529
- Managerial Application 13.3: Microsoft's Antitrust Woes 533