Microeconomics
The Pearson Series in Economics

Abel/Bernanke/Croushore
Macroeconomics*

Acemoglu/Laibson/List
Economics*

Bade/Parkin
Foundations of Economics*

Berk/Helfand
The Economics of the Environment

Bierman/Fernandez
Game Theory with Economic Applications

Blair/Rush
The Economics of Managerial Decisions*

Blanchard
Macroeconomics*

Boyer
Principles of Transportation Economics

Branson
Macroeconomic Theory and Policy

Bruce
Public Finance and the American Economy

Carlton/Perloff
Modern Industrial Organization

Case/Fair/Oster
Principles of Economics*

Chapman
Environmental Economics: Theory, Application, and Policy

Daniels/VanHoose
International Monetary & Financial Economics

Downs
An Economic Theory of Democracy

Farnham
Economics for Managers

Froyn
Macroeconomics: Theories and Policies

Fusfeld
The Age of the Economist

Gerber
International Economics*

Gordon
Macroeconomics*

Greene
Econometric Analysis

Gregory/Stuart
Russian and Soviet Economic Performance and Structure

Hartwick/Olewiler
The Economics of Natural Resource Use

Heilbroner/Milberg
The Making of the Economic Society

Heyne/Boettke/Prychitko
The Economic Way of Thinking

Hubbard/O’Brien
Economics*

Hubbard/O’Brien/Rafferty
Macroeconomics*

Hughes/Cain
American Economic History

Husted/Melvin
International Economics

Jehle/Reny
Advanced Microeconomic Theory

Keat/Young/Erfle
Managerial Economics

Klein
Mathematical Methods for Economics

Krugman/Obsfeld/Melitz
International Economics: Theory & Policy*

Laidler
The Demand for Money

Lynn
Economic Development: Theory and Practice for a Divided World

Miller
Economics Today*

Miller/Benjamin
The Economics of Macro Issues

Miller/Perloff
The Economics of Public Issues

Mishkin
The Economics of Money, Banking, and Financial Markets*

The Economics of Money, Banking, and Financial Markets, Business School Edition*

Macroeconomics: Policy and Practice*

Murray
Econometrics: A Modern Introduction

O’Sullivan/Sheffrin/Perez
Economics: Principles, Applications and Tools*

Parkin
Economics*

Perloff
Microeconomics*

Microeconomics: Theory and Applications with Calculus*

Perloff/Brand
Managerial Economics and Strategy*

Pindyck/Rubinfeld
Microeconomics*

Riddell/Shackelford/Stamos/Schneider
Economics: A Tool for Critically Understanding Society

Roberts
The Choice: A Fable of Free Trade and Protection

Scherer
Industry Structure, Strategy, and Public Policy

Schiller
The Economics of Poverty and Discrimination

Sherman
Market Regulation

Stock/Watson
Introduction to Econometrics

Studenmund
Using Econometrics: A Practical Guide

Todaro/Smith
Economic Development

Walters/Walters/Appel/Callahan/Centanni/Maes/O’Neill
Econversations: Today’s Students Discuss Today’s Issues

Williamson
Macroeconomics

*denotes MyLab Economics titles. Visit www.pearson.com/mylab/economics to learn more.
Microeconomics

Seventh Edition

R. Glenn Hubbard
Columbia University

Anthony Patrick O’Brien
Lehigh University

Pearson

New York, NY
Microsoft and/or its respective suppliers make no representations about the suitability of the information contained in the documents and related graphics published as part of the services for any purpose. All such documents and related graphics are provided “as is” without warranty of any kind. Microsoft and/or its respective suppliers hereby disclaim all warranties and conditions with regard to this information, including all warranties and conditions of merchantability, whether express, implied or statutory, fitness for a particular purpose, title and non-infringement. In no event shall Microsoft and/or its respective suppliers be liable for any special, indirect or consequential damages or any damages whatsoever resulting from loss of use, data or profits, whether in an action of contract, negligence or other tortious action, arising out of or in connection with the use or performance of information available from the services.

The documents and related graphics contained herein could include technical inaccuracies or typographical errors. Changes are periodically added to the information herein. Microsoft and/or its respective suppliers may make improvements and/or changes in the product(s) and/or the program(s) described herein at any time. Partial screen shots may be viewed in full within the software version specified.

Microsoft® and Windows® are registered trademarks of the Microsoft Corporation in the U.S.A. and other countries. This book is not sponsored or endorsed by or affiliated with the Microsoft Corporation.

Copyright © 2019, 2017, 2015 by Pearson Education, Inc. or its affiliates. All Rights Reserved. Manufactured in the United States of America. This publication is protected by copyright, and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise. For information regarding permissions, request forms, and the appropriate contacts within the Pearson Education Global Rights and Permissions department, please visit www.pearsoned.com/permissions/.

Acknowledgments of third-party content appear on the appropriate page within the text.

PEARSON, ALWAYS LEARNING, and MYLAB are exclusive trademarks owned by Pearson Education, Inc. or its affiliates in the U.S. and/or other countries.

Unless otherwise indicated herein, any third-party trademarks, logos, or icons that may appear in this work are the property of their respective owners, and any references to third-party trademarks, logos, icons, or other trade dress are for demonstrative or descriptive purposes only. Such references are not intended to imply any sponsorship, endorsement, authorization, or promotion of Pearson’s products by the owners of such marks, or any relationship between the owner and Pearson Education, Inc., or its affiliates, authors, licensees, or distributors.


Title: Microeconomics / R. Glenn Hubbard, Columbia University, Anthony Patrick O’Brien, Lehigh University.
Subjects: LCSH: Microeconomics.
Classification: LCC HB172 .H83 2018 | DDC 338.5—dc23
LC record available at https://lccn.loc.gov/2017050534

ISBN 10: 0-13-473750-4
For Constance, Raph, and Will
—R. Glenn Hubbard

For Cindy, Matthew, Andrew, and Daniel
—Anthony Patrick O’Brien
Glenn Hubbard, policymaker, professor, and researcher. R. Glenn Hubbard is the dean and Russell L. Carson Professor of Finance and Economics in the Graduate School of Business at Columbia University and professor of economics in Columbia’s Faculty of Arts and Sciences. He is also a research associate of the National Bureau of Economic Research and a director of Automatic Data Processing, Black Rock Closed-End Funds, and MetLife. He received a PhD in economics from Harvard University in 1983. From 2001 to 2003, he served as chair of the White House Council of Economic Advisers and chair of the OECD Economic Policy Committee, and from 1991 to 1993, he was deputy assistant secretary of the U.S. Treasury Department. He currently serves as co-chair of the nonpartisan Committee on Capital Markets Regulation. Hubbard’s fields of specialization are public economics, financial markets and institutions, corporate finance, macroeconomics, industrial organization, and public policy. He is the author of more than 100 articles in leading journals, including American Economic Review, Brookings Papers on Economic Activity, Journal of Finance, Journal of Financial Economics, Journal of Money, Credit, and Banking, Journal of Political Economy, Journal of Public Economics, Quarterly Journal of Economics, RAND Journal of Economics, and Review of Economics and Statistics. His research has been supported by grants from the National Science Foundation, the National Bureau of Economic Research, and numerous private foundations.

Tony O’Brien, award-winning professor and researcher. Anthony Patrick O’Brien is a professor of economics at Lehigh University. He received a PhD from the University of California, Berkeley, in 1987. He has taught principles of economics for more than 20 years, in both large sections and small honors classes. He received the Lehigh University Award for Distinguished Teaching. He was formerly the director of the Diamond Center for Economic Education and was named a Dana Foundation Faculty Fellow and Lehigh Class of 1961 Professor of Economics. He has been a visiting professor at the University of California, Santa Barbara, and the Graduate School of Industrial Administration at Carnegie Mellon University. O’Brien’s research has dealt with issues such as the evolution of the U.S. automobile industry, the sources of U.S. economic competitiveness, the development of U.S. trade policy, the causes of the Great Depression, and the causes of black–white income differences. His research has been published in leading journals, including American Economic Review, Quarterly Journal of Economics, Journal of Money, Credit, and Banking, Industrial Relations, Journal of Economic History, and Explorations in Economic History. His research has been supported by grants from government agencies and private foundations.
<table>
<thead>
<tr>
<th>Part</th>
<th>Title</th>
<th>Chapters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PART 1</strong></td>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>Chapter 1</td>
<td>Economics: Foundations and Models</td>
<td>2</td>
</tr>
<tr>
<td>Appendix: Using Graphs and Formulas</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Chapter 2</td>
<td>Trade-offs, Comparative Advantage, and the Market System</td>
<td>40</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>Where Prices Come From: The Interaction of Demand and Supply</td>
<td>72</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>Economic Efficiency, Government Price Setting, and Taxes</td>
<td>108</td>
</tr>
<tr>
<td>Appendix: Quantitative Demand and Supply Analysis</td>
<td>141</td>
<td></td>
</tr>
<tr>
<td><strong>PART 2</strong></td>
<td>Markets in Action: Policy and Applications</td>
<td></td>
</tr>
<tr>
<td>Chapter 5</td>
<td>Externalities, Environmental Policy, and Public Goods</td>
<td>146</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>Elasticity: The Responsiveness of Demand and Supply</td>
<td>182</td>
</tr>
<tr>
<td>Chapter 7</td>
<td>The Economics of Health Care</td>
<td>218</td>
</tr>
<tr>
<td><strong>PART 3</strong></td>
<td>Firms in the Domestic and International Economies</td>
<td></td>
</tr>
<tr>
<td>Chapter 8</td>
<td>Firms, the Stock Market, and Corporate Governance</td>
<td>252</td>
</tr>
<tr>
<td>Appendix: Tools to Analyze Firms’ Financial Information</td>
<td>278</td>
<td></td>
</tr>
<tr>
<td>Chapter 9</td>
<td>Comparative Advantage and the Gains from International Trade</td>
<td>288</td>
</tr>
<tr>
<td><strong>PART 4</strong></td>
<td>Microeconomic Foundations: Consumers and Firms</td>
<td></td>
</tr>
<tr>
<td>Chapter 10</td>
<td>Consumer Choice and Behavioral Economics</td>
<td>324</td>
</tr>
<tr>
<td>Appendix: Using Indifference Curves and Budget Lines to Understand Consumer Behavior</td>
<td>358</td>
<td></td>
</tr>
<tr>
<td>Chapter 11</td>
<td>Technology, Production, and Costs</td>
<td>372</td>
</tr>
<tr>
<td>Appendix: Using Isoquants and Isocost Lines to Understand Production and Cost</td>
<td>402</td>
<td></td>
</tr>
<tr>
<td><strong>PART 5</strong></td>
<td>Market Structure and Firm Strategy</td>
<td></td>
</tr>
<tr>
<td>Chapter 12</td>
<td>Firms in Perfectly Competitive Markets</td>
<td>414</td>
</tr>
<tr>
<td>Chapter 13</td>
<td>Monopolistic Competition: The Competitive Model in a More Realistic Setting</td>
<td>450</td>
</tr>
<tr>
<td>Chapter 14</td>
<td>Oligopoly: Firms in Less Competitive Markets</td>
<td>478</td>
</tr>
<tr>
<td>Chapter 15</td>
<td>Monopoly and Antitrust Policy</td>
<td>506</td>
</tr>
<tr>
<td>Chapter 16</td>
<td>Pricing Strategy</td>
<td>538</td>
</tr>
<tr>
<td><strong>PART 6</strong></td>
<td>Labor Markets, Public Choice, and the Distribution of Income</td>
<td></td>
</tr>
<tr>
<td>Chapter 17</td>
<td>The Markets for Labor and Other Factors of Production</td>
<td>562</td>
</tr>
<tr>
<td>Chapter 18</td>
<td>Public Choice, Taxes, and the Distribution of Income</td>
<td>600</td>
</tr>
<tr>
<td>Glossary</td>
<td>G-1</td>
<td></td>
</tr>
<tr>
<td>Company Index</td>
<td>I-1</td>
<td></td>
</tr>
<tr>
<td>Subject Index</td>
<td>I-3</td>
<td></td>
</tr>
<tr>
<td>Credits</td>
<td>C-1</td>
<td></td>
</tr>
</tbody>
</table>


**CONTENTS**

<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>P-1</td>
</tr>
<tr>
<td>A Word of Thanks</td>
<td>P-24</td>
</tr>
</tbody>
</table>

**PART 1: Introduction**

**CHAPTER 1: Economics: Foundations and Models**

**Why Does Ford Assemble Cars in Both the United States and Mexico?**

1. **Three Key Economic Ideas**
   - People Are Rational
   - People Respond to Economic Incentives
   - Apply the Concept: Does Health Insurance Give People an Incentive to Become Obese?
   - Optimal Decisions Are Made at the Margin

**Solved Problem 1.1:** The Marginal Benefit and Marginal Cost of Speed Limits

1. **The Economic Problem That Every Society Must Solve**
   - What Goods and Services Will Be Produced?
   - How Will the Goods and Services Be Produced?
   - Who Will Receive the Goods and Services Produced?
   - Centrally Planned Economies versus Market Economies
   - The Modern “Mixed” Economy
   - Efficiency and Equity

1. **Economic Models**
   - The Role of Assumptions in Economic Models
   - Forming and Testing Hypotheses in Economic Models
   - Positive and Normative Analysis
   - Apply the Concept: What Can Economics Contribute to the Debate over Tariffs?

1. **Microeconomics and Macroeconomics**

1. **Economic Skills and Economics as a Career**

1. **A Preview of Important Economic Terms**

1. **Conclusion**
   - An Inside Look: Is Manufacturing Returning to the United States?

*Chapter Summary and Problems* 22

Key Terms, Summary, Review Questions, Problems and Applications, and Critical Thinking Exercises

Appendix: Using Graphs and Formulas 28

Graphs of One Variable 29

Graphs of Two Variables 30

Slopes of Lines 31

Taking into Account More Than Two Variables on a Graph 32

Positive and Negative Relationships 32

Determining Cause and Effect 34

Are Graphs of Economic Relationships Always Straight Lines? 35

Slopes of Nonlinear Curves 35

Formulas 36

Formula for a Percentage Change 37

Formulas for the Areas of a Rectangle and a Triangle 37

Summary of Using Formulas 38

Problems and Applications 38

**CHAPTER 2: Trade-offs, Comparative Advantage, and the Market System** 40

Managers at Tesla Motors Face Trade-offs 40

2.1 Production Possibilities Frontiers and Opportunity Costs 42

Graphing the Production Possibilities Frontier 42

**Solved Problem 2.1:** Drawing a Production Possibilities Frontier for Tesla Motors 44

Increasing Marginal Opportunity Costs 46

Economic Growth 47

2.2 Comparative Advantage and Trade 48

Specialization and Gains from Trade 48

Apply the Concept: Comparative Advantage, Opportunity Cost, and Housework 53

**Don’t Let This Happen to You:** Don’t Confuse Absolute Advantage and Comparative Advantage 51

**Solved Problem 2.2:** Comparative Advantage and the Gains from Trade 52

Apply the Concept: Managers at Feeding America Use the Market Mechanism to Reduce Hunger 62

2.3 The Market System 54

The Circular Flow of Income 55

The Gains from Free Markets 56

The Market Mechanism 56

**Apply the Concept:** A Story of the Market System in Action: How Do You Make an iPad? 57

The Role of the Entrepreneur in the Market System 59

The Legal Basis of a Successful Market System 59

* These end-of-chapter resource materials repeat in all chapters. Select chapters also include Real-Time Data Exercises. Students can complete all questions, problems, and exercises in MyLab Economics.
| CONTENTS |
|-----------------|----------|
| **Conclusion**  | 63       |
| An Inside Look:  |          |
| Tesla Bets Big on Nevada Battery Plant | 64       |
| **Chapter Summary and Problems** | 66       |
| **CHAPTER 3: Where Prices Come From:** |          |
| The Interaction of Demand and Supply | 72       |
| **How Smart Is Your Water?** |          |
| 3.1 The Demand Side of the Market |          |
| Demand Schedules and Demand Curves | 74       |
| The Law of Demand | 75       |
| What Explains the Law of Demand? | 75       |
| Holding Everything Else Constant: The Ceteris Paribus Condition |          |
| Variables That Shift Market Demand | 76       |
| Apply the Concept: |          |
| Will a Substitute Fail for a Lack of Complements? | 77       |
| Apply the Concept: |          |
| Millennials Shake Up the Markets for Soda, Groceries, Big Macs, and Running Shoes | 78       |
| A Change in Demand versus a Change in Quantity Demanded | 81       |
| Apply the Concept: |          |
| Forecasting the Demand for Premium Bottled Water | 81       |
| 3.2 The Supply Side of the Market |          |
| Supply Schedules and Supply Curves | 82       |
| The Law of Supply | 83       |
| Variables That Shift Market Supply | 83       |
| A Change in Supply versus a Change in Quantity Supplied | 86       |
| Apply the Concept: |          |
| How Markets Eliminate Surpluses and Shortages | 87       |
| Demand and Supply Both Count | 88       |
| Solved Problem 3.3: Demand and Supply Both Count: A Tale of Two Letters | 88       |
| 3.3 Market Equilibrium: Putting Demand and Supply Together |          |
| The Effect of Shifts in Demand on Equilibrium | 90       |
| The Effect of Shifts in Supply on Equilibrium | 90       |
| The Effect of Shifts in Demand and Supply over Time | 90       |
| Apply the Concept: |          |
| Lower Demand for Orange Juice—But Higher Prices? | 92       |
| Solved Problem 3.4: |          |
| Can We Predict Changes in the Price and Quantity of Organic Corn? | 94       |
| Shifts in a Curve versus Movements along a Curve | 95       |
| Don’t Let This Happen to You: Remember: |          |
| A Change in a Good’s Price Does Not Cause the Demand or Supply Curve to Shift | 96       |
| Conclusion | 97       |
| An Inside Look: |          |
| McDonald’s Looks for New Ways to Attract Customers | 98       |
| **Chapter Summary and Problems** | 100      |
| **CHAPTER 4: Economic Efficiency, Government Price Setting, and Taxes** | 108      |
| 4.1 Consumer Surplus and Producer Surplus |          |
| Consumer Surplus | 110      |
| Apply the Concept: |          |
| The Consumer Surplus from Uber | 112      |
| Producer Surplus | 114      |
| What Consumer Surplus and Producer Surplus Measure | 115      |
| 4.2 The Efficiency of Competitive Markets |          |
| Marginal Benefit Equals Marginal Cost in Competitive Equilibrium | 115      |
| Economic Surplus | 116      |
| Deadweight Loss | 117      |
| Economic Surplus and Economic Efficiency | 117      |
| 4.3 Government Intervention in the Market: Price Floors and Price Ceilings | 118      |
| Price Floors: Government Policy in Agricultural Markets | 118      |
| Apply the Concept: |          |
| Price Floors in Labor Markets: The Debate over Minimum Wage Policy | 119      |
| Price Ceilings: Government Rent Control Policy in Housing Markets | 121      |
| Don’t Let This Happen to You: Don’t Confuse “Scarcity” with “Shortage” | 122      |
| Black Markets and Peer-to-Peer Sites | 122      |
| Solved Problem 4.3: What’s the Economic Effect of a Black Market in Renting Apartments? | 123      |
| The Results of Government Price Controls: Winners, Losers, and Inefficiency | 124      |
| Apply the Concept: |          |
| Price Controls Lead to Economic Decline in Venezuela | 124      |
| Positive and Normative Analysis of Price Ceilings and Price Floors | 126      |
| 4.4 The Economic Effect of Taxes |          |
| The Effect of Taxes on Economic Efficiency | 126      |
| Tax Incidence: Who Actually Pays a Tax? | 127      |
| Solved Problem 4.4: When Do Consumers Pay All of a Sales Tax Increase? | 128      |
| Apply the Concept: |          |
| Is the Burden of the Social Security Tax Really Shared Equally between Workers and Firms? | 130      |
| Conclusion | 131      |
| An Inside Look: |          |
| Will Uber Be Required to Pay British VAT? | 132      |
| **Chapter Summary and Problems** | 141      |
| Appendix: Quantitative Demand and Supply Analysis |          |
| Demand and Supply Equations | 141      |
| Calculating Consumer Surplus and Producer Surplus |          |
| Review Questions | 144      |
| Problems and Applications | 144      |
PART 2 Markets in Action: Policy and Applications

CHAPTER 5: Externalities, Environmental Policy, and Public Goods 146

Why Does ExxonMobil Want to Pay a Carbon Tax? 146

5.1 Externalities and Economic Efficiency 148
The Effect of Externalities 148
Externalities and Market Failure 150
What Causes Externalities? 151

5.2 Private Solutions to Externalities: The Coase Theorem 151
The Economically Efficient Level of Pollution Reduction 152
Apply the Concept: The Clean Air Act: How a Government Policy Reduced Infant Mortality 152
The Basis for Private Solutions to Externalities 154
Don’t Let This Happen to You: Remember That It’s the Net Benefit That Counts 154
Do Property Rights Matter? 155
The Problem of Transactions Costs 156
The Coase Theorem 156
Apply the Concept: How Can You Defend Your Knees on a Plane Flight? 156

5.3 Government Policies to Deal with Externalities 157
Imposing a Tax When There Is a Negative Externality 157
Providing a Subsidy When There Is a Positive Externality 158
Apply the Concept: Should the Government Tax Cigarettes and Soda? 159
Solved Problem 5.3: Dealing with the Externalities of Car Driving 160
Command-and-Control versus Market-Based Approaches 162
The End of the Sulfur Dioxide Cap-and-Trade System 163
Are Tradable Emission Allowances Licenses to Pollute? 163
Apply the Concept: Should the United States Enact a Carbon Tax to Fight Global Warming? 163

5.4 Four Categories of Goods 165
The Demand for a Public Good 166
The Optimal Quantity of a Public Good 167
Solved Problem 5.4: Determining the Optimal Level of Public Goods 169
Common Resources 170

Conclusion 173
Chapter Summary and Problems 174

CHAPTER 6: Elasticity: The Responsiveness of Demand and Supply 182

Do Soda Taxes Work? 182
6.1 The Price Elasticity of Demand and Its Measurement 184
Measuring the Price Elasticity of Demand 184
Elastic Demand and Inelastic Demand 185
An Example of Calculating Price Elasticities 185
The Midpoint Formula 186
Solved Problem 6.1: Calculating the Price Elasticity of Demand 187
When Demand Curves Intersect, the Flatter Curve Is More Elastic 188
Polar Cases of Perfectly Elastic and Perfectly Inelastic Demand 188
Don’t Let This Happen to You: Don’t Confuse Inelastic with Perfectly Inelastic 189

6.2 The Determinants of the Price Elasticity of Demand 190
Availability of Close Substitutes 190
Passage of Time 191
Luxuries versus Necessities 191
Definition of the Market 191
Share of a Good in a Consumer’s Budget 191
Some Estimated Price Elasticities of Demand 191

6.3 The Relationship between Price Elasticity of Demand and Total Revenue 192
Elasticity and Revenue with a Linear Demand Curve 193
Solved Problem 6.3: Price and Revenue Don’t Always Move in the Same Direction 195
Apply the Concept: Why Does Amazon Care about Price Elasticity? 196

6.4 Other Demand Elasticities 197
Cross-Price Elasticity of Demand 197
Income Elasticity of Demand 198
Apply the Concept: Price Elasticity, Cross-Price Elasticity, and Income Elasticity in the Market for Alcoholic Beverages 199

6.5 Using Elasticity to Analyze the Disappearing Family Farm 199
Solved Problem 6.5: Using Price Elasticity to Analyze the Effects of a Soda Tax 200

6.6 The Price Elasticity of Supply and Its Measurement 202
Measuring the Price Elasticity of Supply 202
Determinants of the Price Elasticity of Supply 202
Apply the Concept: Why Are Oil Prices So Unstable? 203
Polar Cases of Perfectly Elastic and Perfectly Inelastic Supply 204
Using Price Elasticity of Supply to Predict Changes in Price 206

Conclusion 207
Chapter Summary and Problems 209
CHAPTER 7: The Economics of Health Care 218

Where Will You Find Health Insurance? 218
7.1 The Improving Health of People in the United States 220
Changes over Time in U.S. Health
Reasons for Long-Run Improvements in U.S. Health 221
7.2 Health Care around the World 222
The U.S. Health Care System 224
Apply the Concept: The Increasing Importance of Health Care in the U.S. Economy
The Health Care Systems of Canada, Japan, and the United Kingdom 225
Comparing Health Care Outcomes around the World 226
How Useful Are Cross-Country Comparisons of Health Outcomes? 227
7.2 Information Problems and Externalities in the Market for Health Care 228
Adverse Selection and the Market for “Lemons” 228
Asymmetric Information in the Market for Health Insurance 229
Don’t Let This Happen to You: Don’t Confuse Adverse Selection with Moral Hazard
Externalities in the Market for Health Care 230
Should the Government Run the Health Care System? 233
7.3 The Debate over Health Care Policy in the United States 234
The Rising Cost of Health Care 236
Apply the Concept: Are U.S. Firms Handicapped by Paying for Their Employees’ Health Insurance?
Explaining Increases in Health Care Spending 237
The Continuing Debate over Health Care Policy 240
Solved Problem 7.4: Recent Trends in U.S. Health Care
Apply the Concept: How Much Is That MRI Scan? 243
Conclusion 245
Chapter Summary and Problems 246

PART 3 Firms in the Domestic and International Economies

CHAPTER 8: Firms, the Stock Market, and Corporate Governance 252

Is Snapchat the Next Facebook . . . or the Next Twitter? 254
Who Is Liable? Limited and Unlimited Liability 254
Corporations Earn the Majority of Revenue and Profits 255
Apply the Concept: Why Are Fewer Young People Starting Businesses? 256
The Structure of Corporations and the Principal–Agent Problem 257
8.2 How Firms Raise Funds 258
Sources of External Funds 258
Apply the Concept: The Rating Game: Are the Federal Government or State Governments Likely to Default on Their Bonds? 259
Stock and Bond Markets Provide Capital—and Information 261
The Fluctuating Stock Market 262
Don’t Let This Happen to You: When Snap Shares Are Sold, Snap Doesn’t Get the Money 262
Apply the Concept: Why Are Many People Poor Stock Market Investors? 264
Solved Problem 8.2: Why Does Warren Buffett Like Mutual Funds? 265
8.3 Using Financial Statements to Evaluate a Corporation 266
The Income Statement 266
The Balance Sheet 267
8.4 Recent Issues in Corporate Governance Policy 268
The Accounting Scandals of the Early 2000s 268
Corporate Governance and the Financial Crisis of 2007–2009 268
Government Regulation in Response to the Financial Crisis 269
Did Principal–Agent Problems Help Cause the 2007–2009 Financial Crisis? 269
Apply the Concept: Should Investors Worry about Corporate Governance at Snapchat? 270
Conclusion 272
Chapter Summary and Problems 273
Appendix: Tools to Analyze Firms’ Financial Information 278
Using Present Value to Make Investment Decisions 278
Solved Problem 8A.1: How to Receive Your Contest Winnings 280
Using Present Value to Calculate Bond Prices 281
Using Present Value to Calculate Stock Prices 282
A Simple Formula for Calculating Stock Prices 282
Going Deeper into Financial Statements 283
Analyzing Income Statements 284
Analyzing Balance Sheets 284
Review Questions 286
Problems and Applications 286

CHAPTER 9: Comparative Advantage and the Gains from International Trade 288

President Trump, Oreo Cookies, and Free Trade 288
9.1 The United States in the International Economy 290
The Importance of Trade to the U.S. Economy 291
U.S. International Trade in a World Context 292
9.2 Comparative Advantage in International Trade
A Brief Review of Comparative Advantage
Comparative Advantage and Absolute Advantage

Solved Problem 9.3: The Gains from Trade
Why Don’t We See Complete Specialization?
Does Anyone Lose as a Result of International Trade?

Don’t Let This Happen to You: Remember
That Trade Creates Both Winners and Losers

Apply the Concept: Who Gains and Who Loses from U.S. Trade with China?

Where Does Comparative Advantage Come From?

9.3 How Countries Gain from International Trade
Increasing Consumption through Trade

Solved Problem 9.3: The Gains from Trade
Why Don’t We See Complete Specialization?
Does Anyone Lose as a Result of International Trade?

Don’t Let This Happen to You: Remember
That Trade Creates Both Winners and Losers

Apply the Concept: Who Gains and Who Loses from U.S. Trade with China?

Where Does Comparative Advantage Come From?

9.4 Government Policies That Restrict International Trade
Tariffs
Quotas and Voluntary Export Restraints
Measuring the Economic Effect of the Sugar Quota

Solved Problem 9.4: Measuring the Economic Effect of a Quota
The High Cost of Preserving Jobs with Tariffs and Quotas

Apply the Concept: Smoot-Hawley, the Politics of Tariffs, and the Cost of Protecting a Vanishing Industry

Gains from Unilateral Elimination of Tariffs and Quotas

Other Barriers to Trade

9.5 The Debate over Trade Policies and Globalization
Why Do Some People Oppose the World Trade Organization?

Apply the Concept: Protecting Consumer Health or Protecting U.S. Firms from Competition?

Dumping

Positive versus Normative Analysis (Once Again)

Conclusion

Chapter Summary and Problems

PART 4 Microeconomic Foundations: Consumers and Firms

CHAPTER 10: Consumer Choice and Behavioral Economics

J.C. Penney Customers Didn’t Buy into “Everyday Low Prices”

10.1 Utility and Consumer Decision Making
An Overview of the Economic Model of Consumer Behavior
Utility
The Principle of Diminishing Marginal Utility
The Rule of Equal Marginal Utility per Dollar Spent

Solved Problem 10.1: Finding the Optimal Level of Consumption
What if the Rule of Equal Marginal Utility per Dollar Does Not Hold?

Don’t Let This Happen to You: Equalize Marginal Utilities per Dollar
The Income Effect and Substitution Effect of a Price Change

10.2 Where Demand Curves Come From
Apply the Concept: Are There Any Upward-Sloping Demand Curves in the Real World?

10.3 Social Influences on Decision Making
The Effects of Celebrity Endorsements
Network Externalities
Does Fairness Matter?

Apply the Concept: Who Made the Most Profit from the Broadway Musical Hamilton?

10.4 Behavioral Economics: Do People Make Rational Choices?

Pitfalls in Decision Making

Apply the Concept: A Blogger Who Understands the Importance of Ignoring Sunk Costs

“Nudges”: Using Behavioral Economics to Guide Behavior

The Behavioral Economics of Shopping

Apply the Concept: J.C. Penney Meets Behavioral Economics

Solved Problem 10.3: Why Doesn’t Tesla Charge Its Employees to Park Their Cars?

Solved Problem 10A.1: When Does a Price Change Make a Consumer Better Off?
The Income Effect and the Substitution Effect of a Price Change
How a Change in Income Affects Optimal Consumption

The Slope of the Indifference Curve, the Slope of the Budget Line, and the Rule of Equal Marginal Utility per Dollar Spent

The Rule of Equal Marginal Utility per Dollar Spent Revisited
Review Questions
Problems and Applications
CHAPTER 11: Technology, Production, and Costs 372

Will the Cost of MOOCs Revolutionize Higher Education? 372

11.1 Technology: An Economic Definition 374

Apply the Concept: Would You Please Be Quiet? 374

Technology Change at Segment.com

11.2 The Short Run and the Long Run in Economics 375

The Difference between Fixed Costs and Variable Costs 375

Apply the Concept: Fixed Costs in the Publishing Industry 376

Implicit Costs versus Explicit Costs 376

The Production Function 377

A First Look at the Relationship between Production and Cost 378

11.3 The Marginal Product of Labor and the Average Product of Labor 379

The Law of Diminishing Returns 379

Graphing Production 380

Apply the Concept: Adam Smith’s Famous Account of the Division of Labor in a Pin Factory 381

The Relationship between Marginal Product and Average Product 381

An Example of Marginal and Average Values: College Grades 382

11.4 The Relationship between Short-Run Production and Short-Run Cost 383

Marginal Cost 383

Why Are the Marginal and Average Cost Curves U Shaped? 383

Solved Problem 11.4: Calculating Marginal Cost and Average Cost 385

11.5 Graphing Cost Curves 386

11.6 Costs in the Long Run 388

Economies of Scale 388

Long-Run Average Cost Curves for Automobile Factories 389

Solved Problem 11.6: Using Long-Run Average Cost Curves to Understand Business Strategy 389

Don’t Let This Happen to You: Don’t Confuse Diminishing Returns with Diseconomies of Scale 391

Chapter Summary and Problems 394

Appendix: Using Isoquants and Isocost Lines to Understand Production and Cost 402

Isoquants 402

An Isoquant Graph 402

The Slope of an Isoquant 403

Isocost Lines 403

Graphing the Isocost Line 403

The Slope and Position of the Isocost Line 403

Choosing the Cost-Minimizing Combination of Capital and Labor 405

Different Input Price Ratios Lead to Different Input Choices 405

Solved Problem 11A.1: Firms Responding to Differences in Input Price Ratios 406

Another Look at Cost Minimization 407

Solved Problem 11A.2: Determining the Optimal Combination of Inputs 408

Apply the Concept: Do National Football League Teams Behave Efficiently? 409

The Expansion Path 410

Review Questions 411

Problems and Applications 411

PART 5 Market Structure and Firm Strategy

CHAPTER 12: Firms in Perfectly Competitive Markets 414

Are Cage-Free Eggs the Road to Riches? 414

12.1 Perfectly Competitive Markets 417

A Perfectly Competitive Firm Cannot Affect the Market Price 417

The Demand Curve for the Output of a Perfectly Competitive Firm 418

Don’t Let This Happen to You: Don’t Confuse the Demand Curve for Farmer Parker’s Wheat with the Market Demand Curve for Wheat 418

12.2 How a Firm Maximizes Profit in a Perfectly Competitive Market 419

Revenue for a Firm in a Perfectly Competitive Market 420

Determining the Profit-Maximizing Level of Output 420

12.3 Illustrating Profit or Loss on the Cost Curve Graph 422

Showing Profit on a Graph 423

Solved Problem 12.3: Determining Profit-Maximizing Price and Quantity 424

Don’t Let This Happen to You: Remember That Firms Maximize Their Total Profit, Not Their Profit per Unit 426

Illustrating When a Firm Is Breaking Even or Operating at a Loss 426

Apply the Concept: Losing Money in the Restaurant Business 427

12.4 Deciding Whether to Produce or to Shut Down in the Short Run 428

The Supply Curve of a Firm in the Short Run 429

Solved Problem 12.4: When to Shut Down a Farm 430

The Market Supply Curve in a Perfectly Competitive Industry 431
12.5 "If Everyone Can Do It, You Can’t Make Money at It": The Entry and Exit of Firms in the Long Run 432
- Economic Profit and the Entry or Exit Decision 432
- Long-Run Equilibrium in a Perfectly Competitive Market 434
- The Long-Run Supply Curve in a Perfectly Competitive Market 436
**Apply the Concept:** In the Apple App Store, Easy Entry Makes the Long Run Pretty Short 437
- Increasing-Cost and Decreasing-Cost Industries 438

12.6 Perfect Competition and Economic Efficiency 438
- Productive Efficiency 438
- **Solved Problem 12.6:** How Productive Efficiency Benefits Consumers 439
- Allocative Efficiency 440

**Conclusion** 441

**Chapter Summary and Problems** 442

**CHAPTER 13:** Monopolistic Competition: The Competitive Model in a More Realistic Setting 450

13.1 Demand and Marginal Revenue for a Firm in a Monopolistically Competitive Market 452
- The Demand Curve for a Monopolistically Competitive Firm 452
- Marginal Revenue for a Firm with a Downward-Sloping Demand Curve 452

13.2 How a Monopolistically Competitive Firm Maximizes Profit in the Short Run 454
- **Solved Problem 13.2:** Does Minimizing Cost Maximize Profit at Apple? 456

13.3 What Happens to Profits in the Long Run? 457
- How Does the Entry of New Firms Affect the Profits of Existing Firms? 457
- **Don’t Let This Happen to You:** Don’t Confuse Zero Economic Profit with Zero Accounting Profit 458
- Is Zero Economic Profit Inevitable in the Long Run? 461
- **Solved Problem 13.3:** Red Robin Abandons an Experiment in Fast-Casual Restaurants 461

13.4 Comparing Monopolistic Competition and Perfect Competition 462
- Excess Capacity under Monopolistic Competition 463
- Is Monopolistic Competition Inefficient? 463
- How Consumers Benefit from Monopolistic Competition 464
- **Apply the Concept:** One Way to Differentiate Your Restaurant? Become a Ghost! 464

13.5 How Marketing Differentiates Products 465
- Brand Management 466
- Advertising 466
- Defending a Brand Name 466

13.6 What Makes a Firm Successful? 466
- **Apply the Concept:** Is Being the First Firm in the Market a Key to Success? 467

**Conclusion** 469

**Chapter Summary and Problems** 470

**CHAPTER 14:** Oligopoly: Firms in Less Competitive Markets 478

14.1 Oligopoly and Barriers to Entry 480
- Barriers to Entry 481
- **Apply the Concept:** Got a Great Recipe for Cookies? Don’t Try Selling Them in Wisconsin or New Jersey 483

14.2 Game Theory and Oligopoly 484
- A Duopoly Game: Price Competition between Two Firms 485
- Firm Behavior and the Prisoner’s Dilemma 486
- **Don’t Let This Happen to You:** Don’t Misunderstand Why Each Firm Ends Up Charging a Price of $9.99 486
- **Solved Problem 14.2:** Is Offering a College Student Discount a Prisoner’s Dilemma for Apple and Spotify? 487
- Can Firms Escape the Prisoner’s Dilemma? 488
- **Apply the Concept:** Are the Big Four Airlines Colluding? 489
- Cartels: The Case of OPEC 491

14.3 Sequential Games and Business Strategy 492
- Deterring Entry 492
- **Solved Problem 14.3:** Is Deterring Entry Always a Good Idea? 494
- Bargaining 495

14.4 The Five Competitive Forces Model 496
- Competition from Existing Firms 496
- The Threat from Potential Entrants 497
- Competition from Substitute Goods or Services 497
- The Bargaining Power of Buyers 497
- The Bargaining Power of Suppliers 497
- **Apply the Concept:** Can We Predict Which Firms Will Continue to Be Successful? 498

**Conclusion** 499

**Chapter Summary and Problems** 500

**CHAPTER 15:** Monopoly and Antitrust Policy 506

15.1 Is Any Firm Ever Really a Monopoly? 508
- **Apply the Concept:** Is the NCAA a Monopoly? 508
15.2 Where Do Monopolies Come From? 510
Government Action Blocks Entry 510
Apply the Concept: Does Hasbro Have a Monopoly on Monopoly? 511
Control of a Key Resource 512
Apply the Concept: Are Diamond Profits Forever? The De Beers Diamond Monopoly 512
Network Externalities 513
Natural Monopoly 514

15.3 How Does a Monopoly Choose Price and Output? 515
Marginal Revenue Once Again 515
Profit Maximization for a Monopolist 516
Solved Problem 15.3: Finding the Profit-Maximizing Price and Output for a Cable Monopoly 518
Don’t Let This Happen to You: Don’t Assume That Charging a Higher Price Is Always More Profitable for a Monopolist 519

15.4 Does Monopoly Reduce Economic Efficiency? 519
Comparing Monopoly and Perfect Competition 519
Measuring the Efficiency Losses from Monopoly 520
How Large Are the Efficiency Losses Due to Monopoly? 521
Market Power and Technological Change 522

15.5 Government Policy toward Monopoly 522
Antitrust Laws and Antitrust Enforcement 522
Apply the Concept: Have Generic Drug Firms Been Colluding to Raise Prices? 523
Merger; The Trade-off between Market Power and Efficiency 524
The Department of Justice and FTC Merger Guidelines 526
Regulating Natural Monopolies 528
Solved Problem 15.5: What Should Your College Charge for a MOOC? 529
Conclusion 530
Chapter Summary and Problems 531

CHAPTER 16: Pricing Strategy 538
Walt Disney Discovers the Magic of Big Data 538
16.1 Pricing Strategy, the Law of One Price, and Arbitrage 540
Arbitrage 540
Solved Problem 16.1: Is Arbitrage Just a Rip-off? 541
Why Don’t All Firms Charge the Same Price? 541
16.2 Price Discrimination: Charging Different Prices for the Same Product 542
The Requirements for Successful Price Discrimination 542
Don’t Let This Happen to You: Don’t Confuse Price Discrimination with Other Types of Discrimination 543
An Example of Price Discrimination 543
Solved Problem 16.2: How Apple Uses Price Discrimination to Increase Profits 544
Airlines: The Kings of Price Discrimination 545
Apply the Concept: Big Data and the Rise of Dynamic Pricing 546
Perfect Price Discrimination 548
Price Discrimination across Time 549
Can Price Discrimination Be Illegal? 551

16.3 Other Pricing Strategies 551
Odd Pricing: Why Is the Price $2.99 Instead of $3.00? 551
Why Do McDonald’s and Other Firms Use Cost-Plus Pricing? 552
Apply the Concept: Cost-Plus Pricing in the Publishing Industry 552
How Can Using Two-Part Tariffs Increase a Firm’s Profit? 553
Conclusion 556
Chapter Summary and Problems 557

PART 6 Labor Markets, Public Choice, and the Distribution of Income

CHAPTER 17: The Markets for Labor and Other Factors of Production 562
Rio Tinto Mines with Robots 562
17.1 The Demand for Labor 564
The Marginal Revenue Product of Labor 564
Solved Problem 17.1: Hiring Decisions by a Firm That Is a Price Maker 566
The Market Demand Curve for Labor 567
Factors That Shift the Market Demand Curve for Labor 567
17.2 The Supply of Labor 568
The Market Supply Curve of Labor 569
Factors That Shift the Market Supply Curve of Labor 569
17.3 Equilibrium in the Labor Market 570
The Effect on Equilibrium Wages of a Shift in Labor Demand 571
Apply the Concept: Is Investing in a College Education a Good Idea? 571
The Effect of Immigration on the U.S. Labor Market 572
Apply the Concept: Will You Compete with a Robot for a Job—Or Work with One? 574
17.4 Explaining Differences in Wages 577
Don’t Let This Happen to You: Remember That Prices and Wages Are Determined at the Margin 578
Apply the Concept: Technology and the Earnings of “Superstars” 578
Compensating Differentials 579
Discrimination 580
The following chart helps you organize your syllabus based on your teaching preferences and objectives:

<table>
<thead>
<tr>
<th>Core Chapter 1: Economics: Foundations and Models</th>
<th>Optional Chapter 1 Appendix: Using Graphs and Formulas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 2: Trade-offs, Comparative Advantage, and the Market System</td>
<td>Chapter 4 Appendix: Quantitative Demand and Supply Analysis</td>
</tr>
<tr>
<td>Chapter 3: Where Prices Come From: The Interaction of Demand and Supply</td>
<td>Chapter 4: Economic Efficiency, Government Price Setting, and Taxes</td>
</tr>
<tr>
<td>Chapter 6: Elasticity: The Responsiveness of Demand and Supply</td>
<td>Chapter 5: Externalities, Environmental Policy, and Public Goods</td>
</tr>
<tr>
<td>Chapter 8: Firms, the Stock Market, and Corporate Governance</td>
<td>Chapter 7: The Economics of Health Care</td>
</tr>
<tr>
<td>Chapter 9: Comparative Advantage and the Gains from International Trade</td>
<td>Chapter 8 Appendix: Tools to Analyze Firms’ Financial Information</td>
</tr>
<tr>
<td>Core</td>
<td>Optional</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>Chapter 10: Consumer Choice and Behavioral Economics</td>
</tr>
<tr>
<td></td>
<td>Chapter 10 Appendix: Using Indifference Curves and Budget Lines to Understand Consumer Behavior</td>
</tr>
<tr>
<td>Chapter 11: Technology, Production, and Costs</td>
<td>Chapter 11 Appendix: Using Isoquants and Isocost Lines to Understand Production and Cost</td>
</tr>
<tr>
<td>Chapter 12: Firms in Perfectly Competitive Markets</td>
<td></td>
</tr>
<tr>
<td>Chapter 13: Monopolistic Competition: The Competitive Model in a More Realistic Setting</td>
<td></td>
</tr>
<tr>
<td>Chapter 14: Oligopoly: Firms in Less Competitive Markets</td>
<td></td>
</tr>
<tr>
<td>Chapter 15: Monopoly and Antitrust Policy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 16: Pricing Strategy</td>
</tr>
<tr>
<td>Chapter 17: The Markets for Labor and Other Factors of Production</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 18: Public Choice, Taxes, and the Distribution of Income</td>
</tr>
</tbody>
</table>
Our approach in this new edition remains what it was in the first edition, published nearly 15 years ago: to provide students and instructors an economics text that delivers complete economics coverage with many real-world business examples. Our goal has been to teach economics in a “widget-free” way by using real-world business and policy examples. We are gratified by the enthusiastic response from students and instructors who have used the first six editions of this book and who have made it a best-selling economics textbook.

Much has happened in the U.S. and world economies since we prepared the previous edition, including the election of a U.S. president with a distinctive approach to economic policy. We have incorporated many of these developments in the new real-world examples and policy discussions in this edition and also in the digital resources.

New to This Edition

We are grateful to the many instructors and students who made suggestions for improvements in the previous edition. We have done our best to incorporate as many of those suggestions as possible. Here is an overview of the revisions, followed by a more detailed description.

Overview of Changes

- All the chapter openers feature either new companies or have updated information. Students can visit MyLab Economics to watch a brief video that summarizes the key points of each chapter opener.

- Chapters 1–4, include new An Inside Look features to help students apply economic thinking to current events and policy debates as they are presented in news articles. Additional news articles and analyses appear weekly on MyLab Economics.

- There are 19 new Apply the Concept features (formerly titled Making the Connection) to help students tie economic concepts to current events and policy issues. The Apply the Concept features that were retained from the previous edition are updated. Students can visit MyLab Economics to watch more than 60 videos in which we summarize the key points in each feature. Related assessment accompanies each video, so students can test their understanding before moving on to a new section of the chapter.

- There are 5 new Solved Problems and 8 heavily revised Solved Problems. This feature helps students break down and answer economic problems step by step. There are additional Interactive Solved Problems on MyLab Economics, where students can receive feedback and tutorial help.

- There is a new category of end-of-chapter material titled Critical Thinking Exercises. We were motivated to add this new category of exercises because many instructors have told us that students need help building skills in the following areas: (1) analyzing and interpreting information; (2) applying reasoning and logic to new or unfamiliar ideas and situations; (3) examining ideas and concepts from multiple perspectives; and (4) clearly communicating their findings in a brief paper or class presentation. Students can complete these exercises on MyLab Economics and receive feedback and tutorial help.

- All the figures and tables are updated with the latest data available. Video animations of all the numbered figures and select tables are located on MyLab Economics. Graded practice exercises are included with these animations.
• We have replaced or updated many of the end-of-chapter Problems and Applications. In most chapters, one or two problems include graphs or tables for students to analyze. Select chapters have a category titled Real-Time Data Exercises, and we updated some of these exercises. Students can complete these exercises on MyLab Economics and receive feedback and tutorial help.

New Content and Features by Chapter

Here is a description of key changes by chapter.

Chapter 1, “Economics: Foundations and Models,” opens with a new discussion of why Ford Motor Company manufactures cars in both the United States and Mexico. An Inside Look at the end of the chapter presents a news article and analysis of how likely it is that significant numbers of manufacturing jobs will return to the United States from overseas. New Solved Problem 1.1 analyzes the marginal benefit and marginal cost of speed limits on highways. A new Apply the Concept examines why countries trade with each other and how economic concepts can help us evaluate policy debates about tariffs on imports. Taking a principles of economics class requires students to learn different terms, models, and a new way of analyzing real-world events. It can be challenging for students, especially non-majors, to appreciate how this course can help them in a career in business or government or in a nonprofit organization. We therefore decided to add to Chapter 1 a new section that describes economics as a career and highlights the key skills students of any major can gain from studying economics.

Chapter 2, “Trade-offs, Comparative Advantage, and the Market System,” opens with an updated discussion of the resource allocation decisions managers at Tesla Motors face. An Inside Look at the end of the chapter discusses Tesla’s decision to build a factory in Nevada to mass produce lithium-ion batteries for its electric cars. A new Apply the Concept illustrates how managers at the nonprofit organization Feeding America use the market mechanism to more efficiently allocate food based on the needs of food programs around the country.

Chapter 3, “Where Prices Come From: The Interaction of Demand and Supply,” opens with a new discussion of how Coca-Cola and Pepsi-Cola responded to a fall in demand for sodas by introducing premium bottled water, sometimes called smart water. We use the market for premium bottled water to develop the demand and supply model. An Inside Look at the end of the chapter examines how McDonald’s responded to shifts in consumer demand by serving breakfast all day and offering online ordering and home delivery. There are three new Apply the Concepts: “Virtual Reality Headsets: Will a Substitute Fail for a Lack of Complements?”; “Millennials Shake Up the Markets for Soda, Groceries, Big Macs, and Running Shoes”; and “Forecasting the Demand for Premium Bottled Water.”

Chapter 4, “Economic Efficiency, Government Price Setting, and Taxes,” opens with a new discussion about the economic link between food riots in Venezuela and the rise in popularity of Uber in the United States. At the end of the chapter, An Inside Look examines problems Uber has encountered in attempting to expand its services in the United Kingdom. There are two new Apply the Concepts: “The Consumer Surplus from Uber” and “Price Controls Lead to Economic Decline in Venezuela.”

Chapter 5, “Externalities, Environmental Policy, and Public Goods,” opens with a new discussion of ExxonMobil’s support of a carbon tax. Two Apply the Concepts in the chapter now incorporate the latest information about government policies toward air pollution and global warming.

Chapter 6, “Elasticity: The Responsiveness of Demand and Supply,” opens with a new discussion of how to evaluate the success of the soda tax enacted by several cities, including San Francisco and Philadelphia, in improving people’s health and increasing tax revenue.
Chapter 7, “The Economics of Health Care,” opens with a new discussion of how insurance companies are dealing with the effects of the Patient Protection and Affordable Care Act of 2010. There is also a discussion of the 2017 debate in Congress over whether that act should be extensively revised.

Chapter 8, “Firms, the Stock Market, and Corporate Governance,” opens with a new comparison of the initial public offerings of Snap, Twitter, and Facebook. A new Apply the Concept explores why investors are concerned about potential corporate governance issues at Snap and other social media firms.

Chapter 9, “Comparative Advantage and the Gains from International Trade,” opens with the decision by Mondelez to move production of Oreo cookies to Mexico to provide context for a new discussion of recent debates about the North American Free Trade Agreement (NAFTA) and the Trans-Pacific Partnership (TPP). A new Apply the Concept analyzes who gains and who loses from U.S. trade with China.

Chapter 10, “Consumer Choice and Behavioral Economics,” opens with an updated discussion of the problems plaguing the JCPenney department store chain. A new Apply the Concept discusses why ticket scalpers have made a larger profit from the hit Broadway musical Hamilton than have the show’s producers or stars. New Solved Problem 10.3 analyzes why Tesla doesn’t charge workers to park in the lot at its California factory even though the lot has a severe shortage of spaces.

Chapter 11, “Technology, Production, and Costs,” opens with an updated discussion of the effects of massive open online courses (MOOCs) on the costs of higher education. A new Apply the Concept examines how software company Segment.com rearranged work areas to increase employee output.

Chapter 12, “Firms in Perfectly Competitive Markets,” opens with an updated discussion of the difficulty farmers have making an economic profit selling cage-free eggs. A new Solved Problem analyzes why a wheat farmer decided to take 170 acres out of production and plant grass, and a new Apply the Concept discusses competition in the Asian restaurant market in New York City.

Chapter 13, “Monopolistic Competition: The Competitive Model in a More Realistic Setting,” opens with a new discussion of Panera Bread’s strategy of differentiating its restaurants by serving only “clean food.” A new Apply the Concept continues the discussion of that company’s strategy. Another new Apply the Concept discusses a new phenomenon in the restaurant industry: ghost restaurants that exist only online. New Solved Problem 13.3 analyzes why Red Robin abandoned its experiment in fast-casual restaurants.


Chapter 15, “Monopoly and Antitrust Policy,” includes a new Apply the Concept discussing the reasons for the high prices of some generic drugs.

Chapter 16, “Pricing Strategy,” opens with an updated discussion of how Disney uses big data to improve its theme park pricing. A new Apply the Concept discusses how firms ranging from airlines to zoos use big data and dynamic pricing to maximize profit.

Chapter 17, “The Markets for Labor and Other Factors of Production,” opens with an updated discussion of whether Rio Tinto’s extensive use of robots to mine ore in Australia is an indicator of future automation in other industries. Immigration has become a particularly contentious political issue, which led us to add the
new section “The Effect of Immigration on the U.S. Labor Market,” including new Figure 17.6, which shows annual legal immigration into the United States as a percentage of the U.S. population.

Chapter 18, “Public Choice, Taxes, and the Distribution of Income,” opens with a new discussion of proposals to dramatically change how the federal government taxes businesses. We have updated the chapter’s discussion to highlight the key points in this debate.

To make room for the new content described earlier, we have cut approximately 17 Apply the Concepts and 4 Solved Problems from the previous edition and transferred some of them to the book’s Instructor’s Manual, where they are available for instructors who wish to continue using them.

Solving Teaching and Learning Challenges

Many students who take a principles of economics course have difficulty seeing the relevance of the key concepts of opportunity cost, trade-offs, scarcity, and demand and supply to their lives and their careers. This reduces the willingness of some students to prepare for class and to be engaged during class. We address this challenge with contextual learning, a modern organization of content, and an extensive selection of digital assets available on MyLab Economics.

The Foundation: Contextual Learning and Modern Organization

We believe a course is successful if students can apply what they have learned to both their personal lives and their careers, and if they have developed the analytical skills to understand what they read in the media. That’s why we explain economic concepts by using many real-world business examples and applications in the chapter openers, graphs, Apply the Concept features, An Inside Look features, and end-of-chapter problems. This approach helps majors from all disciplines become educated consumers, voters, and citizens. In addition to our widget-free approach, we have a modern organization and place interesting policy topics early in the book to pique student interest. Here are a few highlights of our approach:

• **A strong set of introductory chapters.** The introductory chapters provide students with a solid foundation in the basics. We emphasize the key ideas of marginal analysis and economic efficiency. In Chapter 4, “Economic Efficiency, Government Price Setting, and Taxes,” we use the concepts of consumer and producer surplus to measure the economic effects of price ceilings and price floors as they relate to the familiar examples of rental properties and the minimum wage. (We revisit consumer and producer surplus in Chapter 9, “Comparative Advantage and the Gains from International Trade,” where we discuss outsourcing and analyze government policies that affect trade; in Chapter 15, “Monopoly and Antitrust Policy,” where we examine the effect of market power on economic efficiency; and in Chapter 16, “Pricing Strategy,” where we examine the effect of firm pricing policy on economic efficiency.) In Chapter 8, “Firms, the Stock Market, and Corporate Governance,” we provide students with a basic understanding of how firms are organized, raise funds, and provide information to investors. We also illustrate how in a market system entrepreneurs meet consumer wants and efficiently organize production.

• **Early coverage of policy issues.** To expose students to policy issues early in the course, we discuss trade policy in Chapter 1, “Economics: Foundations and Models”; rent control and the minimum wage in Chapter 4, “Economic Efficiency, Government Price Setting, and Taxes”; air pollution, global warming, and public goods in Chapter 5, “Externalities, Environmental Policy, and Public Goods”; government policy toward
soda and other sweetened beverages in Chapter 6, “Elasticity: The Responsiveness of Demand and Supply”; and health care policy in Chapter 7, “The Economics of Health Care.”

- **Complete coverage of monopolistic competition.** We devote a full chapter, Chapter 13, “Monopolistic Competition: The Competitive Model in a More Realistic Setting,” to monopolistic competition prior to covering oligopoly and monopoly in Chapter 14, “Oligopoly: Firms in Less Competitive Markets,” and Chapter 15, “Monopoly and Antitrust Policy.” Although many instructors cover monopolistic competition very briefly or dispense with it entirely, we think it is an overlooked tool for reinforcing the basic message of how markets work in a context that is much more familiar to students than are the agricultural examples that dominate discussions of perfect competition. We use the monopolistic competition model to introduce the downward-sloping demand curve material usually introduced in a monopoly chapter. This approach helps students grasp the important point that nearly all firms—not just monopolies—face downward-sloping demand curves. Covering monopolistic competition directly after perfect competition also allows for early discussion of topics such as brand management and sources of competitive success. Nevertheless, we wrote the chapter so that instructors who prefer to cover monopoly (Chapter 15, “Monopoly and Antitrust Policy”) directly after perfect competition (Chapter 12, “Firms in Perfectly Competitive Markets”) can do so without loss of continuity.

- **Extensive, realistic game theory coverage.** In Chapter 14, “Oligopoly: Firms in Less Competitive Markets,” we use game theory to analyze competition among oligopolists. Game theory helps students understand how companies with market power make strategic decisions in many competitive situations. We use familiar companies such as Apple, Amazon, Dell, Spotify, and Walmart in our game theory applications.

- **Unique coverage of pricing strategy.** In Chapter 16, “Pricing Strategy,” we explore how firms use pricing strategies to increase profits. Students encounter pricing strategies everywhere—when they buy a movie ticket, book a flight for spring break, or research book prices online. We use these relevant, familiar examples to illustrate how companies use strategies such as price discrimination, cost-plus pricing, and two-part tariffs.

**MyLab Economics**

**OVERVIEW**

**Reach every student by pairing this text with MyLab Economics**

MyLab is the teaching and learning platform that empowers you to reach every student. By combining trusted author content with digital tools and a flexible platform, MyLab personalizes the learning experience and improves results for each student. Learn more about MyLab Economics at www.pearson.com/mylab/economics.

**Deliver trusted content**

You deserve teaching materials that meet your own high standards for your course. That’s why we partner with highly respected authors to develop interactive content and course-specific resources that you can trust—and that keep your students engaged.

**Empower each learner**

Each student learns at a different pace. Personalized learning pinpoints the precise areas where each student needs practice, giving all students the support they need—when and where they need it—to be successful.

**Teach your course your way**

Your course is unique. So whether you’d like to build your own assignments, teach multiple sections, or set prerequisites, MyLab gives you the flexibility to easily create your course to fit your needs.
**Improve student results**

When you teach with MyLab, student performance improves. That’s why instructors have chosen MyLab for over 15 years, touching the lives of over 50 million students.

**FEATURES IN THE BOOK AND SUPPORTING RESOURCES ON MYLAB ECONOMICS**

Students and instructors will find the following features in the seventh edition and supporting online resources on MyLab Economics.

**Business Cases and An Inside Look News Articles**

Each chapter-opening case provides a real-world context for learning, sparks students’ interest in economics, and helps unify the chapter. The case describes an actual company facing a real situation. The company is integrated in the narrative, graphs, and pedagogical features of the chapter.

Students can visit MyLab Economics to watch a brief video we developed and filmed to summarize the key points of each chapter opener.

**An Inside Look** is a two-page feature that shows students how to apply the concepts from the chapter to the analysis of a news article. The feature appears at the end of Chapters 1–4. An Inside Look presents an excerpt from an article, analysis of the article, a graph(s), and critical thinking questions. Additional articles that are continuously updated are located on MyLab Economics.
**Solved Problems**

Many students have great difficulty handling applied economics problems. We help students overcome this hurdle by including in each chapter two or three worked-out problems that analyze real-world economic issues they hear and read about in the news. Our goals are to keep students focused on the main ideas of each chapter and give them a model of how to solve an economic problem by breaking it down step by step. We tie additional exercises in the end-of-chapter Problems and Applications section to every Solved Problem. Additional Solved Problems appear in the Instructor’s Manuals. In addition, the Test Banks include problems tied to the Solved Problems in the main book. Each of the 36 Solved Problems in the printed text is accompanied by a similar Interactive Solved Problem on MyLab Economics, so students can have more practice and build their problem-solving skills. These interactive tutorials help students learn to think like economists and apply basic problem-solving skills to homework, quizzes, and exams. Each Solved Problem on MyLab Economics and in the digital eText also includes at least one additional graded practice exercise for students.
Apply the Concept

Forecasting the Demand for Premium Bottled Water

It's important for managers to forecast the demand for their products accurately because doing so helps them determine how much of a good to produce. Firms typically set manufacturing schedules at least a month ahead of time. Premium bottled water is a rapidly growing market, and firms need to carefully plan increases in productive capacity. Firms that fail to produce a large enough quantity to keep pace with increasing demand can lose out to competitors. But will the demand for premium bottled water continue to grow at such a rapid pace?

Richard Tedlow of the Harvard Business School has developed a theory of the “three phases of marketing” that can provide some insight into how the markets for many consumer products develop over time. The first phase often has a very large number of firms, each producing a relatively small volume of goods and charging high prices. This phase corresponds to the carbonated soft drink industry in the late nineteenth century, the automobile industry in the early twentieth century, and the personal computer industry in the late 1970s. In the second phase, the market consolidates, with one or a few brands attaining high market shares by selling a large number of units at lower prices. This phase corresponds to the soft drink industry during the middle of the twentieth century, the automobile industry during the 1920s, and the personal computer industry during the 1980s.

Managers at beverage firms will have to take into account a number of factors when estimating the future demand for premium bottled water. Factors that will tend to lead to higher demand for premium bottled water include the popularity of the product with millennials, the trend toward healthier eating habits that has led to declining consumption of carbonated beverages, the taxes on soda that cities have been imposing to both fight obesity and raise tax revenue, and the possibility of attracting consumers who now prefer energy drinks such as Red Bull and sports drinks such as Gatorade. But an obstacle to the rapid growth of demand for premium bottled water comes from doubts raised by some analysts about the benefits from the electrolytes and other ingredients it contains that are not in regular bottled water. If consumers come to believe that these ingredients serve no useful purpose, they may prefer to buy regular bottled water, which typically has a lower price.

As we saw in Chapter 1, economists can use formal models to forecast future values of economic variables. In this case, an economist forecasting the demand for premium bottled water would want to include the factors mentioned in the previous paragraphs as well as other data, including changes over time in demographics and projected income growth.


Your Turn: Test your understanding by doing related problem 1.17 on page 102 at the end of this chapter.
Don’t Let This Happen to You

We know from many years of teaching which concepts students find most difficult. We include in each chapter a box feature called Don’t Let This Happen to You that alerts students to the most common pitfalls in that chapter’s material. We follow up with a related question in the end-of-chapter Problems and Applications section. The questions are also available on MyLab Economics, where students can receive instant feedback and tutorial help.

Concept Checks

Each section of each learning objective concludes with a Concept Check on MyLab Economics that contains one or two multiple-choice, true/false, or fill-in questions. These checks act as “speed bumps” that encourage students to stop and check their understanding of fundamental terms and concepts before moving on to the next section. The goal of this digital resource is to help students assess their progress on a section-by-section basis so they can be better prepared for homework, quizzes, and exams.

Graphs and Summary Tables

Graphs are an indispensable part of a principles of economics course but are a major stumbling block for many students. Every chapter except Chapter 1 includes end-of-chapter problems that require students to draw, read, and interpret graphs. Interactive graphing exercises appear on the book’s supporting Web site. We use four devices to help students read and interpret graphs:

1. Detailed captions
2. Boxed notes
3. Color-coded curves
4. Summary tables with graphs (see pages 80 and 85 for examples)
Each of the 157 numbered figures in the text has a supporting animated version on MyLab Economics. The goal of this digital resource is to help students understand shifts in curves, movements along curves, and changes in equilibrium values. Having an animated version of a graph helps students who have difficulty interpreting the static version in the printed text. We include graded practice exercises with the animations. In our experience, many students benefit from this type of online learning.
Approximately 35 graphs are continuously updated online with the latest available data from FRED (Federal Reserve Economic Data), which is a comprehensive, up-to-date data set maintained by the Federal Reserve Bank of St. Louis. Students can display a pop-up graph that shows new data. The goal of this digital feature is to help students understand how to work with data and understand how including new data affects graphs.

**Review Questions and Problems and Applications—Grouped by Learning Objective to Improve Assessment**

We group the main end-of-chapter material—Summary, Review Questions, and Problems and Applications—under learning objectives. The goals of this organization are to make it easier for instructors to assign problems based on learning objectives, both in the book and on MyLab Economics, and to help students efficiently review material that they find difficult. If students have difficulty with a particular learning objective, an instructor can easily identify which end-of-chapter questions and problems support that objective and assign them as homework or discuss them in class. Every exercise in a chapter’s Problems and Applications section is available on MyLab Economics. Using MyLab Economics, students can complete these and many other exercises online, get tutorial help, and receive instant feedback and assistance on exercises they answer incorrectly. Also, student learning will be enhanced by having the summary material and problems grouped together by learning objective, which allows them to focus on the parts of the chapter they find most challenging. Each major section of the chapter, paired with a learning objective, has at least two review questions and three problems.

As in the previous editions, we include one or more end-of-chapter problems that test students’ understanding of the content presented in the Solved Problem, Apply the Concept, and Don’t Let This Happen to You special features in the chapter. Instructors can cover a feature in class and assign the corresponding problem(s) for homework. The Test Bank Files also include test questions that pertain to these special features.
Developing Career Skills

Learning key economic terms, concepts, and models are all important. For a course to be successful, students need to develop the skills and confidence to apply what they’ve learned outside the classroom. Chapter 1, “Economics: Foundations and Models,” now includes a new section that describes economics as a career and the key skills students of any major can gain from studying economics. As described earlier, features such as chapter-opening business cases, Apply the Concepts, Solved Problems, and end-of-chapter problems provide a real-world context for learning that exposes students to economics as applied in a variety of large and small businesses, government agencies, and nonprofit organizations. Critical Thinking Exercises, a new end-of-chapter category in this edition, help build student skills to analyze and interpret information and apply reasoning and logic to new or unfamiliar ideas and situations.

Economics in Your Life & Career

After the chapter-opening real-world business case, we have a feature titled Economics in Your Life & Career that adds a personal dimension to the chapter opener by asking students to consider how economics affects their lives and careers. The feature piques the interest of students and emphasizes the connection between the material they are learning and their personal and career decisions.

At the end of the chapter, we use the chapter concepts to answer the questions asked at the beginning of the chapter.

Economics in Your Life & Career

Can You Forecast the Future Demand for Premium Bottled Water?

Firms face many challenges in responding to changes in consumer demand. Firms selling premium bottled water need to forecast future demand in order to determine how much production capacity they will need. If you were a manager for Coca-Cola, PepsiCo, Nestlé, Bai, or another firm selling premium bottled water, what factors would you take into account in forecasting future demand? As you read this chapter, try to answer this question. You can check your answers against those we provide on page 97 at the end of this chapter.

Economics in Your Life & Career

Can You Forecast the Future Demand for Premium Bottled Water?

At the beginning of this chapter, we asked what variables you would take into account in forecasting future demand if you were a manager for a firm selling premium bottled water. In Section 3.1, we discussed the factors that affect the demand for a product and provided a list of the most important variables. In the Apply the Concept on page 81, we discussed how economists often use formal models to forecast future demand for a product.

In forecasting demand for premium bottled water, you should take into account factors such as changing demographics, as millennials become a larger fraction of prime-age consumers, and the likelihood that the demand for competing goods, such as carbonated sodas, will decline as consumers turn toward buying healthier products and as more cities impose soda taxes. You may also need to consider whether increased advertising of premium bottled water by large firms such as Coca-Cola and PepsiCo will raise consumer awareness of the product and increase demand for the premium bottled water being sold by other firms as well.

The factors discussed in this chapter provide you with the basic information needed to forecast demand for premium bottled water, although arriving at numerical forecasts requires using statistical analysis that you can learn in more advanced courses.
The authors and Pearson Education have worked together to integrate the text, print, and media resources to make teaching and learning easier.

### Supplements Available to Instructors for Download at www.pearsonhighered.com

<table>
<thead>
<tr>
<th>Instructor's Manual</th>
<th>Features of the Supplement</th>
</tr>
</thead>
</table>
| Authored by Edward Scahill of the University of Scranton | • Chapter-by-chapter summaries organized by learning objectives  
• Extended examples and class exercises  
• Teaching outlines incorporating key terms and definitions, teaching tips, topics for class discussion  
• New Solved Problems  
• New Apply the Concept features  
• Solutions to all review questions, problems, and real-time data exercises in the book |

<table>
<thead>
<tr>
<th>Test Bank</th>
<th>Features of the Supplement</th>
</tr>
</thead>
</table>
| Authored by Randy Methenitis of Richland College | • 4,000 multiple-choice, true/false, short-answer, and graphing questions.  
• Test questions are annotated with the following categories:  
  **Difficulty**—1 for straight recall; 2 for some analysis; and 3 for complex analysis  
  **Type**—multiple-choice, true/false, short-answer, essay  
  **Topic**—the term or concept the question supports  
  **Learning outcome**  
  **Page number** in the main book  
  **Special feature** in the main book  
  **The Association to Advance Collegiate Schools of Business (AACSB) Guidelines** (see description on the next page) |

<table>
<thead>
<tr>
<th>Computerized TestGen</th>
<th>Features of the Supplement</th>
</tr>
</thead>
</table>
| | • Allows instructors to customize, save, and generate classroom tests.  
• Instructors can edit, add, or delete questions from the Test Banks; analyze test results; and organize a database of tests and student results.  
• Many options are available for organizing and displaying tests, along with search and sort features.  
• The software and the Test Banks can be downloaded from www.pearsonhighered.com. |

<table>
<thead>
<tr>
<th>Three Sets of PowerPoint Lecture Presentations</th>
<th>Features of the Supplement</th>
</tr>
</thead>
</table>
| Authored by Paul Holmes of Ashland University | • A comprehensive set of PowerPoint slides can be used by instructors for class presentations or by students for lecture preview or review. These slides include all the graphs, tables, and equations in the textbook. Two versions are available—step-by-step mode, in which you can build graphs as you would on a blackboard, and automated mode, in which you use a single click per slide.  
• A comprehensive set of PowerPoint slides have Classroom Response Systems (CRS) questions built in so that instructors can incorporate CRS “clickers” into their classroom lectures.  
• Student versions of the PowerPoint slides are available as .pdf files. This version allows students to print the slides and bring them to class for note taking. |
What Is the AACSB?

The Association to Advance Collegiate Schools of Business (AACSB) is a not-for-profit corporation of educational institutions, corporations, and other organizations devoted to the promotion and improvement of higher education in business administration and accounting. A collegiate institution offering degrees in business administration or accounting may volunteer for AACSB accreditation review. The AACSB expects a curriculum to include learning experiences in the following categories of Assurance of Learning Standards: Written and Oral Communication; Ethical Understanding and Reasoning; Analytical Thinking; Information Technology; Interpersonal Relations and Teamwork, Diverse and Multicultural Work; Reflective Thinking; and Application of Knowledge. Test Bank questions that test skills relevant to these standards are tagged with the appropriate standard. For example, a question testing the moral questions associated with externalities would receive the Ethical Understanding and Reasoning tag.

Acknowledgements

The guidance and recommendations of the following instructors helped us develop the revision plans for the seventh edition and the supplements package. While we could not incorporate every suggestion from every consultant board member, reviewer, or accuracy checker, we do thank each and every one of you and acknowledge that your feedback was indispensable in developing this text. We greatly appreciate your assistance in making this the best text it could be; you have helped a whole new generation of students learn about the exciting world of economics.

Accuracy Review Board

Our accuracy checkers did a particularly painstaking and thorough job of helping us proof the graphs, equations, and features of the text and supplements. We are grateful for their time and commitment:

Fatma Abdel-Raouf, Goldey-Beacom College
Gbenga Ajilore, The University of Toledo
Harry Ellis, University of North Texas
Robert Gillette, University of Kentucky
Anthony Gyapong, Pennsylvania State University–Abington
Randy Methenitis, Richland College
Brian Rosario, University of California–Davis
Edward Scahill, University of Scranton

Reviewers

The guidance and thoughtful recommendations of many instructors helped us develop and implement a revision plan that improved the book’s content, enhanced the figures, and strengthened the assessment features. We extend special thanks to Edward Scahill of the University of Scranton for helping us revise the chapter openers and the solutions to the end-of-chapter questions and problems, to Randy Methenitis of Richland College for helping us revise the An Inside Look feature in Chapters 1–4, and to Fernando Quijano for creating all the figures in the book and supplements. We are grateful for the comments and many helpful suggestions received from the following reviewers:

Mark Abajian, University of San Diego
Anna Antus, North Hennepin Community College
Ali Arshad, Central New Mexico Community College
David Barrus, Brigham Young University–Idaho
Leon Battista, Quinnipiac University
Susan Bell, Seminole State College of Florida
Bruce Bellner, The Ohio State University
Jennis Biser, Austin Peay State University
Kelly Blanchard, Purdue University
Michael Bonnal, University of Tennessee at Chattanooga
Walter Boyle, Fayetteville Technical Community College
Dave Brown, Pennsylvania State University
Regina Cassady, Valencia College
Basanta Chaudhuri, Rutgers University
Mark Cullivan, University of San Diego
Hong Duong, Salisbury University
Edward Durkin, Cuyahoga Community College
Maria Edlin, Middle Tennessee State University
Fatma El-Hamidi, Dietrich School of Arts and Sciences
Irene Foster, The George Washington University
Mark Gius, Quinnipiac University
Brian Goegan, Arizona State University
Timothy Hamilton, Columbia College
Wayne Hickenbottom, University of Texas at Austin
Mike Hilmer, San Diego State University
Mark Isaac, Florida State University
Rus Janis, University of Massachusetts–Amherst
Sarah Jenyk, Youngstown State University
Stephanie Brewer Jozefowicz, Indiana University of Pennsylvania
Shawna Koger, Arlington Public Schools/Metro Community College
Susan Laury, Georgia State University
Jim Lee, Texas A&M University–Corpus Christi
An Li, University of Massachusetts–Amherst
Yan Li, University of Wisconsin–Eau Claire
Svitlana Maksymenko, University of Pittsburgh
David McClough, Ohio Northern University
Scott McGann, Grossmont College
Merve Meral, University of Massachusetts–Dartmouth
Robert Mohr, University of New Hampshire
Mike Munoz, Northwest Vista College
John Nader, Davenport University
John Neri, University of Maryland
Charles Newton, Houston Community College
Eric Nielsen, St. Louis Community College–Meramec
Dan Norgard, Normandale Community College
Nitin Paranjpe, Wayne State University, Oakland University
Azucena Peralta, El Paso Community College
Claudiney Pereira, Arizona State University
Dennis Petruska, Youngstown State University
Ryan Phelps, Stephen F. Austin State University
Cristina Reiser, University of New Mexico
Giacomo Rondina, University of Colorado Boulder
Eric Rothenburg, Kingsborough Community College
Rolando Sanchez, Northwest Vista College
Jonathan Silberman, Oakland University
Richard Slotkin, Pasadena City College
Arjun Sondhi, Wayne State University
Derek Stimel, University of California, Davis
Bedassa Tadesse, University of Minnesota–Duluth
Regina Trevino, University of San Diego
Roger Wehr, University of Texas–Arlington
Elizabeth Wheaton, Southern Methodist University
Daniel Wolman, Nassau Community College
Sourushe Zandvakili, University of Cincinnati

Accuracy Review Boards
We are grateful to the following accuracy checkers of the previous editions for their hard work on the book and supplements:

Fatma Abdel-Raouf, Goldey-Beacom College
Anne Alexander, University of Wyoming
Clare Battista, California Polytechnic State University
Mohammad Bajwa, Northampton Community College
Cynthia Bansak, St. Lawrence University
Hamid Bastin, Shippensburg University
Doris Bennett, Jacksonville State University
Kelly Hunt Blanchard, Purdue University
Don Bumpass, Sam Houston State University
Charles Callahan III, State University of New York–Brockport
Mark S. Chester, Reading Area Community College
Kenny Christianson, Binghamton University
Ishita Edwards, Oxnard College
Harold Elder, University of Alabama
Harry Ellis, University of North Texas
Can Erbil, Brandeis University
Marc Fusaro, Arkansas Tech University
Sarah Ghosh, University of Scranton
Robert Gillette, University of Kentucky
Maria Giuili, Diablo Valley College
Mark Giu, Quinnipiac University
Robert Godby, University of Wyoming
William L. Goffe, Pennsylvania State University
Edward T. Gullason, formerly, Dowling College
Anthony Gyapong, Pennsylvania State University—Abington
Travis Hayes, University of Tennessee–Chattanooga

The guidance and recommendations of the following instructors helped us shape the previous editions.

Class Testers
We are grateful to both the instructors who class-tested manuscript of the first edition and their students for providing useful recommendations on how to make chapters more interesting, relevant, and accurate:

Charles A. Bennett, Gannon University
Anne E. Bresnock, University of California, Los Angeles, and California State Polytechnic University–Pomona
Linda Childs-Leatherbury, Lincoln University, Pennsylvania
John Eastwood, Northern Arizona University
David Eaton, Murray State University
Paul Elgarian, St. Ambrose University
Patricia A. Freeman, Jackson State University
Robert Godby, University of Wyoming
Frank Gunter, Lehigh University
Ahmed Ispahani, University of La Verne
Brendan Kennelly, Lehigh University and National University of Ireland–Galway
Ernest Massie, Franklin University
Carol McDonough, University of Massachusetts–Lowell
Shah Mehrabi, Montgomery College
Sharon Ryan, University of Missouri–Columbia
Bruce G. Webb, Gordon College
Madelyn Young, Converse College
Susan Zumas, Lehigh University

Previous Edition Class Testers, Accuracy Reviewers, and Consultants
PREFACE

Carol Hogan, University of Michigan–Dearborn
Anisul M. Islam, University of Houston–Downtown
Aaron Jackson, Bentley College
Nancy Jianakoplos, Colorado State University
Thomas C. Kinnaman, Bucknell University
Mary K. Knudson, University of Iowa
Faik A. Koray, Louisiana State University
Stephan Kroll, California State University–Sacramento
Tony Lima, California State University–East Bay
Randy Methenitis, Richland College
Normal C. Miller, Miami University
David Mitch, University of Maryland–Baltimore County
James A. Moreno, Blinn College
Michael Potepan, San Francisco State University
Mary L. Pranzo, California State University–Fresno
Fernando Quijano, Dickinson State University
Matthew Rafferty, Quinnipiac University
Ratha Ramoo, Diablo Valley College
Jeff Reynolds, Northern Illinois University
Brian Rosario, University of California, Davis
Joseph M. Santos, South Dakota State University
Edward Seabell, University of Scranton
Mark V. Siegler, California State University–Sacramento
Stephen Smith, Bakersfield College
Kate Antonovics, University of California, San Diego
Robert Beekman, University of Tampa
Valerie Bencivenga, University of Texas–Austin
Kelly Blanchard, Purdue University
Susan Dadres, Southern Methodist University
Harry Ellis, Jr., University of North Texas
Sherman T. Folland, Oakland University
Robert Gillette, University of Kentucky
Robert Godby, University of Wyoming
William L. Gofle, Pennsylvania State University
Jane S. Himarios, University of Texas–Arlington
Donn M. Johnson, Quinnipiac University
Mark Karscig, Central Missouri State University
Jenny Minier, University of Kentucky
David Mitch, University of Maryland–Baltimore County
Nicholas Noble, Miami University
Michael Potepan, San Francisco State University
Matthew Rafferty, Quinnipiac University
Helen Roberts, University of Illinois–Chicago
Robert Rosenman, Washington State University
Joseph M. Santos, South Dakota State University
Stephen Snyder, University of Pittsburgh
Martin C. Spechler, Indiana University–Purdue University–Indianapolis
Robert Whaples, Wake Forest University
Jonathan B. Wight, University of Richmond

Consultant Boards

We received guidance from a dedicated consultant board during the development of the previous editions at several critical junctures. We relied on the board for input on content, figure treatment, and design:

Kate Antonovics, University of California, San Diego
Robert Beekman, University of Tampa
Valerie Bencivenga, University of Texas–Austin
Kelly Blanchard, Purdue University
Susan Dadres, Southern Methodist University
Harry Ellis, Jr., University of North Texas
Sherman T. Folland, Oakland University
Robert Gillette, University of Kentucky
Robert Godby, University of Wyoming
William L. Gofle, Pennsylvania State University
Jane S. Himarios, University of Texas–Arlington
Donn M. Johnson, Quinnipiac University
Mark Karscig, Central Missouri State University
Jenny Minier, University of Kentucky
David Mitch, University of Maryland–Baltimore County

Reviewers

ALABAMA
William P. Aldridge, University of Alabama
Doris Bennett, Jacksonville State University
Harold W. Elder, University of Alabama–Tuscaloosa
Wanda Hudson, Alabama Southern Community College
Keith D. Malone, University of North Alabama
Edward Merkel, Troy University
James L. Swoford, University of Southern Alabama
Christopher Westley, Jacksonville State University

ARKANSAS
Jerry Crawford, Arkansas State University
Marc Fusaro, Arkansas Tech University
Randall Kesselring, Arkansas State University
Dan Marburger, Arkansas State University

CALIFORNIA
Shawn Abbott, College of the Siskiyous
Renatte Adler, San Diego State University
Ercument Aksoy, Los Angeles Valley College
Maneeza Aminy, Golden Gate University
Kate Antonovics, University of California, San Diego
Becca Arnold, Mesa College
Asatar Bair, City College of San Francisco
Diana Bajrami, College of Alameda
Robert Bise, Orange Coast Community College
Victor Brajer, California State University–Fullerton
Anne E. Bresnock, University of California, Los Angeles, and California State Polytechnic University–Pomona
David Brownstone, University of California, Irvine
Maureen Burton, California State Polytechnic University–Pomona
Annette Chamberlin, National College
Anoshua Chaudhuri, San Francisco State University
James G. Devine, Loyola Marymount University
Jose Esteban, Palomar College
Roger Frantz, San Diego State University
Craig Gallet, California State University–Sacramento
Andrew Gill, California State University–Fullerton
Maria Giuili, Diablo Valley College
Julie Gonzalez, University of California–Santa Cruz
Lisa Grobar, California State University–Long Beach
Steve Hamilton, California State University–Fullerton
Dewey Heinsma, Mt. San Jacinto Community College
Jessica Howell, California State University–Sacramento
Greg Hunter, California State University–Pomona
John Ifcher, Santa Clara University
Ahmed Ispahani, University of LaVerne
George A. Jouganatos, California State University–Sacramento
Leland Kempe, California State University–Fresno
Philip King, San Francisco State University
Lori Kletzer, University of California, Santa Cruz
Stephan Kroll, California State University–Sacramento
David Lang, California State University–Sacramento
Carsten Lange, California State Polytechnic University–Pomona
Don Leet, California State University–Fresno
Rose LeMont, Modesto Junior College
Tony Lima, California State University–East Bay
Solina Lindahl, California Polytechnic State University–San Luis Obispo
Roger Mack, DeAnza College
Michael Marlow, California Polytechnic State University
Scott McGann, Grossmont College
Kristen Monaco, California State University–Long Beach
W. Douglas Morgan, University of California, Santa Barbara
Nivedita Mukherji, Oakland University
Solomon Namala, Cerroitos College
Andrew Narwold, University of San Diego
Fola Odebunmi, Cypress College
Hanna Paulson, West Los Angeles College
Joseph M. Pogodzinski, San Jose State University
Michael J. Potepan, San Francisco State University
Mary L. Pranzo, California State University–Fresno
Sasha Radisich, Glendale Community College
Ratha Ramoo, Diablo Valley College
Scott J. Sambucci, California State University–East Bay
Ariane Schauer, Marymount College
Frederica Shockley, California State University–Chico
Mark Siegler, California State University–Sacramento
Jonathan Silberman, Oakland University
Lisa Simon, California Polytechnic State University–San Louis Obispo
Richard Lee Slotkin, Pasadena City College
Stephen Smith, Bakersfield College
Rodney B. Swanson, University of California–Los Angeles
Martha Stuffer, Irvine Valley College
Lea Templer, College of the Canyons

Kristin A. Van Gaasbeck, California State University–Sacramento
Va Nee Van Vleck, California State University–Fresno
Michael Visser, Sonoma State University
Steven Yamashiro, California State University–Long Beach
Garry Young, Diablo Valley College
Anthony Zambelli, Cuyamaca College

COLORADO
Mohammed Akacem, Metropolitan State College of Denver
Rhonda Corman, University of Northern Colorado
Dale DeBoer, University of Colorado–Colorado Springs
Debbie Evercloud, University of Colorado–Denver
Karen Gebhardt, Colorado State University
Scott Houser, Colorado School of Mines
Murat Iyigun, University of Colorado at Boulder
Nancy Jianakoplos, Colorado State University
Jay Kaplan, University of Colorado–Boulder
William G. Mertens, University of Colorado–Boulder
Rachael Small, University of Colorado–Boulder
Stephen Weiler, Colorado State University

CONNECTICUT
Christopher P. Ball, Quinnipiac University
Mark Gius, Quinnipiac University
Mark Jablonski, University of Hartford
Donn M. Johnson, Quinnipiac University
Robert Martel, University of Connecticut
Charles Meyrick, Housatonic Community College
Judith Mills, Southern Connecticut State University
Matthew Rafferty, Quinnipiac University
Christian Zimmermann, University of Connecticut

DELAWARE
Fatma Abdel-Raouf, Goldey-Beacom College
Ali Ataiifar, Delaware County Community College
Andrew T. Hill, University of Delaware

FLORIDA
Frank Albritton, Seminole State College
Herman Baine, Broward Community College
Robert L. Beekman, University of Tampa
William Browning, Florida Gulf Coast University
Eric P. Chiang, Florida Atlantic University
Martine Duchatelet, Barry University
Hadley Hartman, Santa Fe Community College
Richard Hawkins, University of West Florida
Brad Karp, University of South Florida
Brian Kench, University of Tampa
Carrie B. Kerekes, Florida Gulf Coast University
Thomas McCaleb, Florida State University
Barbara A. Moore, University of Central Florida
Augustine Nelson, University of Miami
Jamie Ortiz, Florida Atlantic University
Deborah Paige, Santa Fe Community College
Robert Pennington, University of Central Florida
Bob Potter, University of Central Florida
Jerry Schwartz, Broward Community College–North
William Stronge, Florida Atlantic University
Nora Underwood, University of Central Florida
Zhiguang Wang, Florida International University
Joan Wiggenhorn, Barry University

GEORGIA
Greg Brock, Georgia Southern University
Donna Fisher, Georgia Southern University
Shelby Frost, Georgia State University
John King, Georgia Southern University
Constantin Ogloblin, Georgia Southern University
Dr. Greg Okoro, Georgia Perimeter College–Clarkston
Michael Rekusak, Georgia Southern University
Bill Yang, Georgia Southern University

IDAHO
Cynthia Hill, Idaho State University
Don Holley, Boise State University
Tesa Stegner, Idaho State University

ILLINOIS
Teshome Abebe, Eastern Illinois University
Ali Akarca, University of Illinois–Chicago
Zsolt Becsi, Southern Illinois University–Carbondale
James Bruehler, Eastern Illinois University
Louis Cain, Loyola University and Northwestern University
Rosa Lea Danielson, College of DuPage
Kevin Dunagan, Oakton Community College
Scott Gilbert, Southern Illinois University
Rajeev K. Goel, Illinois State University
David Gordon, Illinois Valley Community College
Alan Grant, Eastern Illinois University
Rik Hafer, Southern Illinois University–Edwardsville
Alice Melkumian, Western Illinois University
Christopher Mushrush, Illinois State University
Jeff Reynolds, Northern Illinois University
Thomas R. Sadler, Western Illinois University
Eric Schulz, Northwestern University
Dennis Shannon, Southern Illinois College
Charles Scitote, Rock Valley Community College
Neil T. Skaggs, Illinois State University
Kevin Sylwester, Southern Illinois University–Carbondale
Wendine Thompson-Dawson, Monmouth College
Tara Westerhold, Western Illinois University
Mark Witte, Northwestern University
Laurie Wolff, Southern Illinois University–Carbondale
Paula Worthington, Northwestern University

INDIANA
Kelly Blanchard, Purdue University
Cecil Bohanon, Ball State University
Kirk Doran, University of Notre Dame
Eva Dziadula, University of Notre Dame
Mary Flannery, University of Notre Dame
Thomas Gresik, University of Notre Dame
Robert B. Harris, Indiana University–Purdue University
Indianapolis
Fred Herschede, Indiana University–South Bend
Tom Lehman, Indiana Wesleyan University
Abraham Mathew, Indiana University–Purdue University
Indianapolis
John Pomeroy, Purdue University
Curtis Price, University of Southern Indiana
Rob Rude, Ivy Tech Community College
James K. Self, Indiana University–Bloomington
Esther-Mirjam Sent, University of Notre Dame
Virginia Shingleton, Valparaiso University
Martin C. Spechler, Indiana University–Purdue University
Indianapolis
Arun K. Srinivasan, Indiana University–Southeast
Campus
Geetha Suresh, Purdue University

IOWA
Terry Alexander, Iowa State University
Paul Elgatian, St. Ambrose University
Jennifer Fuhrman, University of Iowa
Ken McCormick, University of Northern Iowa
Andy Schuchart, Iowa Central Community College
John Solow, University of Iowa
Jonathan Warner, Dordt College

KANSAS
Guatam Bhattacharya, University of Kansas
Amanda Freeman, Kansas State University
Dipak Ghosh, Emporia State University
Alan Grant, Baker University
Wayne Oberle, St. Ambrose University
Jodi Messer Pelkowski, Wichita State University
Martin Perline, Wichita State University
Joel Potter, Kansas State University
Joshua Rosenbloom, University of Kansas
Shane Sanders, Kansas State University
Dosse Toulaboe, Fort Hays State University
Bhavneet Walia, Kansas State University

KENTUCKY
Tom Cate, Northern Kentucky University
Nan-Ting Chou, University of Louisville
David Eaton, Murray State University
Ann Eike, University of Kentucky
Robert Gillette, University of Kentucky
Barry Haworth, University of Louisville
Gail Hoyt, University of Kentucky
Donna Ingram, Eastern Kentucky University
Waithaka Iraki, Kentucky State University
Hak Youn Kim, Western Kentucky University
Martin Milkman, Murray State University
Jenny Minier, University of Kentucky
David Shideler, Murray State University
John Vahaly, University of Louisville
LOUISIANA
Lara Gardner, Southeastern Louisiana University
Jay Johnson, Southeastern Louisiana University
Faik Koray, Louisiana State University
Paul Nelson, University of Louisiana–Monroe
Sung Chul No, Southern University and A&M College
Tammy Parker, University of Louisiana–Monroe
Wesley A. Payne, Delgado Community College
Nancy Rumore, University of Louisiana at Lafayette

MARYLAND
Carey Borkoski, Anne Arundel Community College
Kathleen A. Carroll, University of Maryland–Baltimore County
Jill Caviglia-Harris, Salisbury University
Dustin Chambers, Salisbury University
Karl Emolf, Mount Saint Mary's University
Marsha Goldfarb, University of Maryland–Baltimore City
Bruce Madariaga, Montgomery College
Shah Mehrabi, Montgomery College
Gretchen Mester, Anne Arundel Community College
David Mitch, University of Maryland–Baltimore County
John Neri, University of Maryland
Henry Terrell, University of Maryland

MASSACHUSETTS
William L. Casey, Jr., Babson College
Arthur Schiller Casimir, Western New England College
Michael Enz, Western New England College
Can Erbil, Brandeis University
Lou Foglia, Suffolk University
Gerald Friedman, University of Massachusetts
Todd Idson, Boston University
Aaron Jackson, Bentley College
Russell A. Janis, University of Massachusetts–Amherst
Anthony Laramie, Merrimack College
Carol McDonough, University of Massachusetts–Lowell
William O'Brien, Worcester State College
Ahmad Saranjam, Bridgewater State College
Howard Shore, Bentley College
Janet Thomas, Bentley College
John Tommasi, University of Massachusetts–Lowell
Gregory H. Wassall, Northeastern University
Bruce G. Webb, Gordon College
Gilbert Wolpe, Newbury College
Jay Zagorsky, Boston University

MICHIGAN
Eric Beckman, Delta College
Jared Boyd, Henry Ford Community College
Victor Claar, Hope College
Dr. Sonia Dalmia, Grand Valley State University
Daniel Giedeman, Grand Valley State University
Allen C. Goodman, Wayne State University
Steven Hayworth, Eastern Michigan University
Gregg Heidebrink, Washtenaw Community College
Carol Hogan, University of Michigan–Dearborn
Marek Kolar, Delta College
Susan J. Linz, Michigan State University
James Luke, Lansing Community College
Ilir Miteza, University of Michigan–Dearborn
John Nader, Grand Valley State University
Norman P. Obst, Michigan State University
Laudo M. Ogura, Grand Valley State University
Robert J. Rossana, Wayne State University
Michael J. Ryan, Western Michigan University
Charles A. Stull, Kalamazoo College
Michael J. Twomey, University of Michigan–Dearborn
Mark Wheeler, Western Michigan University
Wendy Wysocki, Monroe County Community College

MINNESOTA
Mary Edwards, Saint Cloud State University
Phillip J. Grossman, Saint Cloud State University
Monica Hartman, University of St. Thomas
Matthew Hyle, Winona State University
David J. O'Hara, Metropolitan State University–Minneapolis
Kwang Woo (Ken) Park, Minnesota State University–Mankato
Artatrana Ratha, Saint Cloud State University
Ken Rebeck, Saint Cloud State University
Katherine Schmeiser, University of Minnesota

MISSISSIPPI
Becky Campbell, University of Mississippi
Randall Campbell, Mississippi State University
Patricia A. Freeman, Jackson State University
Arlena Sullivan, Jones County Junior College

MISSOURI
Chris Azevedo, University of Central Missouri
Ariel Belasen, Saint Louis University
Catherine Chambers, University of Central Missouri
Paul Chambers, University of Central Missouri
Kermit Clay, Ozarks Technical Community College
Ben Collier, Northwest Missouri State University
John R. Crooker, University of Central Missouri
Jo Durr, Southwest Missouri State University
Julie H. Gallaway, Southwest Missouri State University
Terral Gallaway, Southwest Missouri State University
Mark Karscig, Central Missouri State University
Nicholas D. Peppes, Saint Louis Community College–Forest Park
Steven T. Petty, College of the Ozarks
Sharon Ryan, University of Missouri–Columbia
Ben Young, University of Missouri–Kansas City

MONTANA
Agnieszka Bielinska-Kwapisz, Montana State University–Bozeman
Jeff Bookwalter, University of Montana–Missoula

NEBRASKA
John Dogbey, University of Nebraska–Omaha
Ward Hooker, Central Community College
Allan Jenkins, University of Nebraska–Kearney
James Knudsen, Creighton University
Craig MacPhee, University of Nebraska–Lincoln
Kim Sosin, University of Nebraska–Omaha
Mark E. Wohar, University of Nebraska–Omaha

**NEVADA**
Michael H. Lampert, Truckee Meadows Community College
Bernard Malamud, University of Nevada–Las Vegas
Sheri Perez, College of Southern Nevada
Bill Robinson, University of Nevada–Las Vegas

**NEW HAMPSHIRE**
Evelyn Gick, Dartmouth College
Neil Niman, University of New Hampshire

**NEW JERSEY**
Len Anyanwu, Union County College
Maharuk Bhiladwalla, Rutgers University–New Brunswick
Giuliana Campanelli-Andreopoulous, William Paterson University
Gary Gigliotti, Rutgers University–New Brunswick
John Graham, Rutgers University–Newark
Berch Haroian, William Paterson University
Paul Harris, Camden County College
Jeff Rubin, Rutgers University
Henry Ryder, Gloucester County College
Laura Storino, Rowan University
Donna Thompson, Brookdale Community College

**NEW MEXICO**
Donald Coes, University of New Mexico
Kate Krause, University of New Mexico
Curt Shepherd, University of New Mexico

**NEW YORK**
Seemi Ahmad, Dutchess Community College
Chris Annala, State University of New York–Geneseo
Erol Balkan, Hamilton College
John Bockino, Suffolk County Community College–Ammerman
Charles Callahan III, State University of New York–Brockport
Michael Carew, Baruch College
Sean Corcoran, New York University
Ranjit S. Dighe, City University of New York–Bronx Community College
Debra Dwyer, Stony Brook University
Glenn Gerstner, Saint John's University–Queens
Susan Glanz, Saint John's University–Queens
Wayne A. Grove, LeMoyne College
Nancy Howe, Hudson Valley Community College
Christopher Inya, Monroe Community College
Ghassan Karam, Pace University
Clifford Kern, State University of New York–Binghamton
Mary Lesser, Iona College
Anna Musatti, Columbia University
Theodore Muzio, St. John's University, New York
Emre Ozsoz, Fashion Institute of Technology
Howard Ross, Baruch College
Ed Steinberg, New York University
Leonie Stone, State University of New York–Geneseo
Ganti Subrahmanyam, University of Buffalo
Jogindar S. Uppal, State University of New York–Albany
Susan Wolcott, Binghamton University

**NORTH CAROLINA**
Rita Balaban, University of North Carolina
Otilia Boldea, North Carolina State University
Robert Burrus, University of North Carolina–Wilmington
Lee A. Craig, North Carolina State University
Alexander Deshkovski, North Carolina Central University
Kathleen Dorsainvil, Winston–Salem State University
Lydia Gan, School of Business, University of North Carolina–Pembroke
Michael Goode, Central Piedmont Community College
Salih Hakeem, North Carolina Central University
Melissa Hendrickson, North Carolina State University
Haiyong Liu, East Carolina University
Kosmas Marinakis, North Carolina State University
Todd McFall, Wake Forest University
Shahrriar Mostashari, Campbell University
Jonathan Phillips, North Carolina State University
Bobby Puryear, North Carolina State University
Jeff Sarbaum, University of North Carolina–Greensboro
Peter Schuhmann, University of North Carolina–Wilmington
Robert Shoffner, Central Piedmont Community College
Catherine Skura, Sandhills Community College
Carol Stivender, University of North Carolina–Charlotte
Vera Tabakova, East Carolina University
Eric Taylor, Central Piedmont Community College
Julianne Treme, University of North Carolina–Wilmington
Hui-Kuan Tseng, University of North Carolina at Charlotte
Robert Whaples, Wake Forest University
John Whitehead, Appalachian State University
Gary W. Zimm, East Carolina University
Rick Zuber, University of North Carolina at Charlotte

**OHIO**
Olugbenga Ajilore, The University of Toledo
Benjamin Blair, Columbus State University
John P. Blair, Wright State University
Bolong Cao, Ohio University–Athens
Kyongwook Choi, Ohio University
James D'Angelo, University of Cincinnati
Darlene DeVera, Miami University
Rudy Fichtenbaum, Wright State University
Tim Fuerst, Bowling Green University
Harley Gill, Ohio State University
Rudolf Gill, Ohio State University
Steven Heubeck, Ohio State University
Daniel Horton, Cleveland State University
Michael Jones, University of Cincinnati
Kristen Keith, University of Toledo
Janice Kinghorn, Miami University
Jean Kujawa, Lourdes College
Ernest Massie, Franklin University
Ida A. Mirzaie, Ohio State University
Jay Mutter, University of Akron
Mike Nelson, University of Akron
Nicholas Noble, Miami University
Dennis C. O’Neill, University of Cincinnati
Joseph Palaridy, Youngstown State University
Charles Reichheld, Cuyahoga Community College
Terese Riley, Youngstown State University
Rochelle Ruffer, Youngstown State University
Kate Sheppard, University of Akron
Richard Stratton, University of Akron
Albert Sumell, Youngstown State University
Steve Szheghi, Wilmington College
Melissa Thomasson, Miami University
Yaqin Wang, Youngstown State University
Bert Wheeler, Cedarville University
Kathryn Wilson, Kent State University
Sourushe Zandvakili, University of Cincinnati

OKLAHOMA
David Hudgins, University of Oklahoma
Bill McLean, Oklahoma State University
Denny Myers, Oklahoma City Community College
Ed Price, Oklahoma State University
Abdulhamid Sukar, Cameron University
Zhen Zhu, University of Central Oklahoma

OREGON
Bill Burrows, Lane Community College
Tom Carroll, Central Oregon Community College
Tim Duy, University of Oregon
Alan S. Fudge, Linn-Benton Community College
B. Starr McMullen, Oregon State University
Ted Scheinman, Mount Hood Community College
Larry Singell, University of Oregon
Ayca Tekin-Koru, Oregon State University

PENNSYLVANIA
Bradley Andrew, Juniata College
Mohammad Bajwa, Northampton Community College
Gustavo Barboza, Mercyhurst College
Charles A. Bennett, Gannon University
Cynthia Benzing, West Chester University
Howard Bodenhorn, Lafayette College
Milica Bookman, St. Joseph’s University
Robert Brooker, Gannon University
Eric Brucker, Widener University
Shirley Cassing, University of Pittsburgh
Linda Childs-Leatherbury, Lincoln University
Scott J. Dressler, Villanova University
Satyajit Ghosh, University of Scranton
William L. Goffe, Pennsylvania State University
Anthony Gyapong, Pennsylvania State University—Abington
Mehdi Haririan, Bloomsburg University
Andrew Hill, Federal Reserve Bank of Philadelphia
Steven Husted, University of Pittsburgh
James Jozefowicz, Indiana University of Pennsylvania
Stephanie Jozefowicz, Indiana University of Pennsylvania
Nicholas Karatjas, Indiana University of Pennsylvania
Mary Kelly, Villanova University
Brendan Kennelly, Lehigh University
Thomas C. Kinnaman, Bucknell University
Christopher Magee, Bucknell University
Svitlana Maksymenko, University of Pittsburgh
Katherine McCann, Penn State
Judy McDonald, Lehigh University
Ranganath Murthy, Bucknell University
Hong V. Nguyen, University of Scranton
Cristian Pardo, Saint Joseph’s University
Iordanis Petsas, University of Scranton
Denis Rainhall, West Chester University
Adam Renhoff, Drexel University
Nicole L. Sadowski, York College of Pennsylvania
Edward Scahiil, University of Scranton
Ken Slaysman, York College of Pennsylvania
Rajeev Sooreea, Pennsylvania State University—Altoona
Rebecca Stein, University of Pennsylvania
Sandra Trejos, Clarion University
Peter Zaleski, Villanova University
Ann Zech, Saint Joseph’s University
Lei Zhu, West Chester University
Susan Zumas, Lehigh University

RHODE ISLAND
Jongsung Kim, Bryant University
Leonard Lardaro, University of Rhode Island
Nazma Latif-Zaman, Providence College

SOUTH CAROLINA
Calvin Blackwell, College of Charleston
Ward Hooker, Orangeburg–Calhoun Technical College
Woodrow W. Hughes, Jr., Converse College
John McArthur, Wofford College
Victoria Willis-Miller, Piedmont Technical College
Chad Turner, Clemson University
Madelyn Young, Converse College

SOUTH DAKOTA
Joseph M. Santos, South Dakota State University
Jason Zimmerman, South Dakota State University

TENNESSEE
Sindy Abadie, Southwest Tennessee Community College
Charles Baum, Middle Tennessee State University
John Brassel, Southwest Tennessee Community College
Bichaka Fayissa, Middle Tennessee State University
Michael J. Gootzeit, University of Memphis
Travis Hayes, University of Tennessee–Chattanooga
Christopher C. Klein, Middle Tennessee State University
Leila Pratt, University of Tennessee at Chattanooga
Millicent Sites, Carson-Newman College

TEXAS
Carlos Aguilar, El Paso Community College
Rashid Al-Hmoud, Texas Tech University
William Beaty, Tarleton State University
Klaus Becker, Texas Tech University
Alex Brown, Texas A&M University
Jack A. Bucco, Austin Community College–Northridge
and Saint Edward’s University
Don Bumpass, Sam Houston State University
Marilyn M. Butler, Sam Houston State University
Mike Cohick, Collin County Community College
Cesar Corredor, Texas A&M University
Steven Craig, University of Houston
Patrick Crowley, Texas A&M University–Corpus Christi
Richard Croxdale, Austin Community College
Susan Dadres, Southern Methodist University
David Davenport, McLennan Community College
Harry Ellis, Jr., University of North Texas
Paul Emberton, Texas State University
Diego Escobar, Texas A&M University
Christi Esquivel, Navarro College
Nicholas FeltoVich, University of Houston–Main
Charles Harold Fifield, Baylor University
Jamal G. Husein, Angelo State University
Mark Frank, Sam Houston State University
Alejandro Gelves, Midwestern State University
Edgar Ghossoub, University of Texas–San Antonio
Richard Gosselin, Houston Community College–Central
Sheila Amin Gutierrez de Pineres, University of Texas–Dallas
Tina J. Harvell, Blinn College–Bryan Campus
James W. Henderson, Baylor University
Jane S. Himarios, University of Texas–Arlington
James Holcomb, University of Texas–El Paso
Jamal Husein, Angelo State University
Ansel Islam, University of Houston–Downtown
Karen Johnson, Baylor University
Kathy Kelly, University of Texas–Arlington
Thomas Kemp, Tarrant County College–Northwest
Jim Lee, Texas A&M University–Corpus Christi
Ronnie W. Liggett, University of Texas–Arlington
Akbar Marvasti, University of Houston–Downtown
James Mbata, Houston Community College
Kimberly Mencken, Baylor University
Randy Methenitis, Richland College
Carl Montano, Lamar University
James Moreno, Blinn College
Camille Nelson, Texas A&M University
Michael Nelson, Texas A&M University
Charles Newton, Houston Community College–Southwest
College
John Pisciotta, Baylor University
Shofiqur Rahman, University of Texas–El Paso
Sara Saderion, Houston Community College–Southwest
College
George E. Samuels, Sam Houston State University
David Schutte, Mountain View College
Ivan Tasic, Texas A&M University
David Torres, University of Texas–El Paso
Ross vanWassenhove, University of Houston
Roger Wehr, University of Texas–Arlington
Jim Wollscheid, Texas A&M University–Kingsville
J. Christopher Wreh, North Central Texas College
David W. Yoskowitz, Texas A&M University–Corpus
Christi
Inske Zandvliet, Brookhaven College

UTAH
Chris Fawson, Utah State University
Lowell Glenn, Utah Valley State College
Aric Krause, Westminster College

VERMONT
Nancy Brooks, University of Vermont

VIRGINIA
Lee Badgett, Virginia Military Institute
Lee A. Coppock, University of Virginia
Erik Craft, University of Richmond
Janelle Davenport, Hampton University
Philip Heap, James Madison University
George E. Hoffer, Virginia Commonwealth University
Oleg Korenok, Virginia Commonwealth University
Larry Landrum, Virginia Western Community College
Frances Lea, Germanna Community College
Carrie Meyer, George Mason University
John Min, Northern Virginia Community College
Eugene Bempong Nyantakyi, West Virginia University
James Roberts, Tidewater Community College–Virginia
Beach
Robert Rycroft, University of Mary Washington
Arlene A. Schauer, Mary Mount College
Sarah Stafford, The College of William & Mary
Bob Subrick, James Madison University
Susanne Toney, Hampton University
Michelle Vachris, Christopher Newport University
James Wetzel, Virginia Commonwealth University
George Zestos, Christopher Newport University

WASHINGTON
Genevieve Briand, Washington State University
Lisa Citron, Cascadia College
Andrew Ewing, University of Washington
Stacey Jones, Seattle University
Dean Peterson, Seattle University
Robert Rosenman, Washington State University

WEST VIRGINIA
Jacqueline Agesa, Marshall University
Richard Agesa, Marshall University
Robin S. McCutcheon, Marshall University College of
Business
WISCONSIN
Peng Huang, Ripon College
Marina Karabelas, Milwaukee Area Technical College
Elizabeth Sawyer Kelly, University of Wisconsin–Madison
Pascal Ngoboka, University of Wisconsin–River Falls
Kevin Quinn, St. Norbert College
John R. Stoll, University of Wisconsin–Green Bay

WYOMING
Robert Godby, University of Wyoming

DISTRICT OF COLUMBIA
Leon Battista, American Enterprise Institute
Robert Berman, American University
Michael Bradley, George Washington University
Colleen M. Callahan, American University
Eliane P. Catilina, Graduate School USA
Robert Feinberg, American University
Walter Park, American University
Ralph Sonenshine, American University

INTERNATIONAL
Minh Quang Dao, Carleton University–Ottawa, Canada
A Word of Thanks

Once again, we benefited greatly from the dedication and professionalism of the Pearson Economics team. Portfolio Manager David Alexander’s energy and support were indispensable. David helped mold the presentation and provided words of encouragement whenever our energy flagged. Content Editor Lena Buonanno worked tirelessly to ensure that this text was as good as it could be and to coordinate the many moving parts involved in a project of this magnitude. This new edition posed particular challenges, and we remain astonished at the amount of time, energy, and unfailing good humor she brings to this project. As we worked on the first edition, former Director of Key Markets David Theisen provided invaluable insight into how best to structure a principles text. His advice helped shape nearly every chapter. We extend our thanks to Tricia Murphy, our Product Marketing Manager, and Carlie Marvel, our Field Marketer, for their energy and creativity in presenting our book and digital products to both professors and students.

Christine Donovan managed the entire production process and the extensive supplement package that accompanies the book. Editorial Assistant Nicole Nedwidek assisted the team in completing several tasks, including review surveys and summaries, to help produce both the book and media resources.

We received excellent research assistance on previous editions from Dante DeAntonio, Ed Timmons, Matthew Saboe, David Van Der Goes, and Jason Hockenberry. We thank Elena Zeller, Jennifer Brailsford, Ellen Vandevort Wolf, Emily Webster, Mollie Sweet, Jayme Wagner, and Rebecca Barney for their careful proofreading of first- and second-round page proofs. Over all editions of our books, we received helpful feedback and recommendations from Lehigh University faculty colleagues Frank R. Gunter, Thomas J. Hyclak, and Robert J. Thornton.

As instructors, we recognize how important it is for students to view graphs that are clear and accessible. We are fortunate to have Fernando Quijano render all the figures in our books and also our supplements. Market feedback on the figures continues to be positive. We extend our thanks to Fernando not only for collaborating with us and creating the best figures possible but also for his patience with our demanding schedule.

This seventh edition has several media components, which required skilled and patient creators and developers. We extend special thanks to Andy Taylor of Hodja Media for preparing the video clips and to Paul Graf of the University of Indiana–Bloomington for preparing the graph animations. These videos and animations are an important part of our revision.

A good part of the burden of an undertaking on this scale is borne by our families. We appreciate the patience, support, and encouragement of our wives and children.