

R. GLENN

HUBBARD

ANTHONY PATRICK

O'BRIEN



Microeconomics

SIXTH EDITION

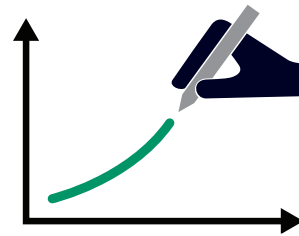
This page intentionally left blank

Practice, Engage, and Assess



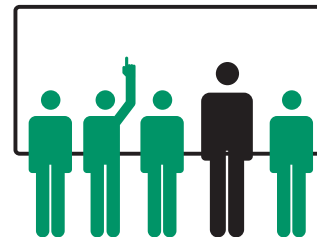
- **Enhanced eText**—The Pearson eText gives students access to their textbook anytime, anywhere. In addition to note-taking, highlighting, and bookmarking, the Pearson eText offers interactive and sharing features. Students actively read and learn, through embedded and auto-graded practice, real-time data-graphs, animations, author videos, and more. Instructors can share comments or highlights, and students can add their own, for a tight community of learners in any class.

- **Practice**—Algorithmically generated homework and study plan exercises with instant feedback ensure varied and productive practice, helping students improve their understanding and prepare for quizzes and tests. Draw-graph exercises encourage students to practice the language of economics.



- **Learning Resources**—Personalized learning aids such as Help Me Solve This problem walkthroughs, Teach Me explanations of the underlying concept, and figure Animations provide on-demand help when students need it most.

- **Adaptive Study Plan**—Monitors each student's progress and offers a continuously personalized study plan based on his or her own homework, quiz, and test results. Includes unlimited practice exercises and the opportunity to prove mastery through quizzes based on recommended learning objectives.



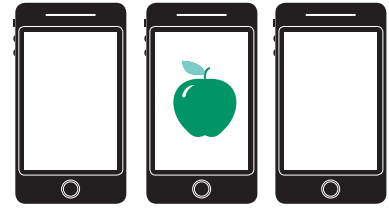
- **Dynamic Study Modules**—With a focus on key topics, these modules work by continuously assessing student performance and activity in real time and, using data and analytics, provide personalized content to reinforce concepts that target each student's particular strengths and weaknesses.

- **Digital Interactives**—Focused on a single core topic and organized in progressive levels, each interactive immerses students in an assignable and auto-graded activity. Digital Interactives are also engaging lecture tools for traditional, online, and hybrid courses, many incorporating real-time data, data displays, and analysis tools for rich classroom discussions.



with MyEconLab[®]

- **Learning Catalytics**—Generates classroom discussion, guides lectures, and promotes peer-to-peer learning with real-time analytics. Students can use any device to interact in the classroom, engage with content, and even draw and share graphs.



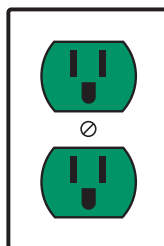
- **Real-Time Data Analysis Exercises**—Using current macro data to help students understand the impact of changes in economic variables, Real-Time Data Analysis Exercises communicate directly with the Federal Reserve Bank of St. Louis's FRED[®] site and update as new data are available.

- **Current News Exercises**—Every week, current microeconomic and macroeconomic news stories, with accompanying exercises, are posted to MyEconLab. Assignable and auto-graded, these multi-part exercises ask students to recognize and apply economic concepts to real-world events.



- **Experiments**—Flexible, easy-to-assign, auto-graded, and available in Single and Multiplayer versions, Experiments in MyEconLab make learning fun and engaging.

- **Reporting Dashboard**—View, analyze, and report learning outcomes clearly and easily. Available via the Gradebook and fully mobile-ready, the Reporting Dashboard presents student performance data at the class, section, and program levels in an accessible, visual manner.



- **LMS Integration**—Link from any LMS platform to access assignments, rosters, and resources, and synchronize MyLab grades with your LMS gradebook. For students, new direct, single sign-on provides access to all the personalized learning MyLab resources that make studying more efficient and effective.

- **Mobile Ready**—Students and instructors can access multimedia resources and complete assessments right at their fingertips, on any mobile device.



This page intentionally left blank

Microeconomics

Sixth Edition

R. Glenn Hubbard
Columbia University

Anthony Patrick O'Brien
Lehigh University

PEARSON

Boston Columbus Indianapolis New York San Francisco
Amsterdam Cape Town Dubai London Madrid Milan Munich Paris Montréal Toronto
Delhi Mexico City São Paulo Sydney Hong Kong Seoul Singapore Taipei Tokyo

Vice President, Business Publishing: Donna Battista
Executive Editor: David Alexander
Executive Development Editor: Lena Buonanno
Editorial Assistant: Michelle Zeng
Vice President, Product Marketing: Maggie Moylan
Director of Marketing, Digital Services and Products: Jeanette Koskinas
Senior Product Marketing Manager: Alison Haskins
Field Marketing Manager: Ramona Elmer
Product Marketing Assistant: Jessica Quazza
Team Lead, Program Management: Ashley Santora
Program Manager: Lindsey Sloan
Team Lead, Project Management: Jeff Holcomb
Project Manager: Carla Thompson
Operations Specialist: Carol Melville
Creative Director: Blair Brown
Art Director: Jon Boylan
Vice President, Director of Digital Strategy and Assessment: Paul Gentile

Manager of Learning Applications: Paul DeLuca
Digital Editor: Denise Clinton
Director, Digital Studio: Sacha Laustsen
Digital Studio Manager: Diane Lombardo
Digital Studio Project Manager: Melissa Honig
Digital Studio Project Manager: Robin Lazrus
Digital Content Team Lead: Noel Lotz
Digital Content Project Lead: Courtney Kamauf
Full-Service Project Management and Composition:
Cenveo® Publisher Services
Interior Designer: Cenveo Publisher Services
Cover Designer: Jon Boylan
Cover Art: © Oleksiy Mark/Fotolia
Printer/Binder: RR Donnelley / Willard
Cover Printer: Phoenix Color / Hagerstown

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.

FRED® is a registered trademark and the FRED® Logo and ST. LOUIS FED are trademarks of the Federal Reserve Bank of St. Louis. <http://research.stlouisfed.org/fred2/>

Copyright © 2017 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 in the appropriate section within the text.

PEARSON, ALWAYS LEARNING, and MYECONLAB® 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.

Library of Congress Cataloging-in-Publication Data

Names: Hubbard, R. Glenn, author. | O’Brien, Anthony Patrick, author.
Title: Microeconomics / R. Glenn Hubbard, Columbia University, Anthony Patrick O’Brien, Lehigh University.
Description: Sixth Edition. | Pearson : Boston, [2017] | Revised edition of the authors’ Microeconomics, 2015. | Includes bibliographical references and index.
Identifiers: LCCN 2015043674 | ISBN 9780134106243 | ISBN 0134106245
Subjects: LCSH: Microeconomics.
Classification: LCC HB172 .H83 2017 | DDC 338.5—dc23
LC record available at [hfp://lcn.loc.gov/2015043674](http://lcn.loc.gov/2015043674)

10 9 8 7 6 5 4 3 2 1

PEARSON

ISBN 10: 0-13-410624-5
ISBN 13: 978-0-13-410624-3

The Pearson Series in Economics

Abel/Bernanke/Croushore
*Macroeconomics**

Acemoglu/Laibson/List
*Economics**

Bade/Parkin
*Foundations of Economics**

Berck/Helfand
The Economics of the Environment

Bierman/Fernandez
Game Theory with Economic Applications

Blanchard
*Macroeconomics**

Blau/Ferber/Winkler
The Economics of Women, Men, and Work

Boardman/Greenberg/Vining/Weimer
Cost-Benefit Analysis

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

Cooter/Ulen
Law & Economics

Daniels/VanHoose
International Monetary & Financial Economics

Downs
An Economic Theory of Democracy

Ehrenberg/Smith
Modern Labor Economics

Farnham
Economics for Managers

Folland/Goodman/Stano
The Economics of Health and Health Care

Fort
Sports Economics

Froyen
Macroeconomics

Fusfeld
The Age of the Economist

Gerber
*International Economics**

González-Rivera
Forecasting for Economics and Business

Gordon
*Macroeconomics**

Greene
Econometric Analysis

Gregory
Essentials of Economics

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

Holt
Markets, Games, and Strategic Behavior

Hubbard/O'Brien
*Economics**
*Money, Banking, and the Financial System**

Hubbard/O'Brien/Rafferty
*Macroeconomics**

Hughes/Cain
American Economic History

Husted/Melvin
International Economics

Jehle/Reny
Advanced Microeconomic Theory

Johnson-Lans
A Health Economics Primer

Keat/Young/Erfl
Managerial Economics

Klein
Mathematical Methods for Economics

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

Laidler
The Demand for Money

Leeds/von Allmen
The Economics of Sports

Leeds/von Allmen/Schiming
*Economics**

Lynn
Economic Development: Theory and Practice for a Divided World

Miller
*Economics Today**
Understanding Modern Economics

Miller/Benjamin
The Economics of Macro Issues

Miller/Benjamin/North
The Economics of Public Issues

Mills/Hamilton
Urban Economics

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/Brander
*Managerial Economics and Strategy**

Phelps
Health Economics

Pindyck/Rubinfeld
*Microeconomics**

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

Roberts
The Choice: A Fable of Free Trade and Protection

Rohlf
Introduction to Economic Reasoning

Roland
Development Economics

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

Tietenberg/Lewis
Environmental and Natural Resource Economics
Environmental Economics and Policy

Todaro/Smith
Economic Development

Waldman/Jensen
Industrial Organization: Theory and Practice

Walters/Walters/Appel/Callahan/Centanni/Maex/O'Neill
Econversations: Today's Students Discuss Today's Issues

Weil
Economic Growth

Williamson
Macroeconomics

*denotes MyEconLab titles

Visit www.myeconlab.com to learn more.

For Constance, Raph, and Will
—*R. Glenn Hubbard*

For Cindy, Matthew, Andrew, and Daniel
—*Anthony Patrick O'Brien*

ABOUT THE AUTHORS



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 his Ph.D. in economics from Harvard University in 1983. From 2001 to 2003, he served as chairman of the White House Council of Economic Advisers

and chairman 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 his Ph.D. 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.

BRIEF CONTENTS

Preface	P-1	PART 5: Market Structure and Firm Strategy	
A Word of Thanks	P-25		
PART 1: Introduction		<hr/>	
Chapter 1: Economics: Foundations and Models	2	Chapter 12: Firms in Perfectly Competitive Markets	406
Appendix: Using Graphs and Formulas	27	Chapter 13: Monopolistic Competition: The Competitive Model in a More Realistic Setting	442
Chapter 2: Trade-offs, Comparative Advantage, and the Market System	40	Chapter 14: Oligopoly: Firms in Less Competitive Markets	470
Chapter 3: Where Prices Come From: The Interaction of Demand and Supply	72	Chapter 15: Monopoly and Antitrust Policy	498
Chapter 4: Economic Efficiency, Government Price Setting, and Taxes	108	Chapter 16: Pricing Strategy	530
Appendix: Quantitative Demand and Supply Analysis	141	<hr/>	
PART 2: Markets in Action: Policy and Applications		PART 6: Labor Markets, Public Choice, and the Distribution of Income	
<hr/>		<hr/>	
Chapter 5: Externalities, Environmental Policy, and Public Goods	146	Chapter 17: The Markets for Labor and Other Factors of Production	556
Chapter 6: Elasticity: The Responsiveness of Demand and Supply	182	Chapter 18: Public Choice, Taxes, and the Distribution of Income	594
Chapter 7: The Economics of Health Care	216	Glossary	G-1
<hr/>		Company Index	I-1
PART 3: Firms in the Domestic and International Economies		Subject Index	I-3
<hr/>		Credits	C-1
Chapter 8: Firms, the Stock Market, and Corporate Governance	250		
Appendix: Tools to Analyze Firms' Financial Information	275		
Chapter 9: Comparative Advantage and the Gains from International Trade	284		
<hr/>			
PART 4: Microeconomic Foundations: Consumers and Firms			
<hr/>			
Chapter 10: Consumer Choice and Behavioral Economics	318		
Appendix: Using Indifference Curves and Budget Lines to Understand Consumer Behavior	350		
Chapter 11: Technology, Production, and Costs	364		
Appendix: Using Isoquants and Isocost Lines to Understand Production and Cost	393		

CONTENTS

Preface	P-1		
A Word of Thanks	P-25		
PART 1: Introduction			
<hr/>			
CHAPTER 1: Economics: Foundations and Models	2		
Will Smart Devices Revolutionize Health Care?	3		
1.1 Three Key Economic Ideas	4		
People Are Rational	5		
People Respond to Economic Incentives	5		
Making the Connection: Does Health Insurance Give People an Incentive to Become Obese?	5		
Optimal Decisions Are Made at the Margin	7		
Solved Problem 1.1: OraSure Makes a Decision at the Margin	7		
1.2 The Economic Problem That Every Society Must Solve	8		
Making the Connection: It's Saturday Afternoon; Why Aren't You at the Game?	9		
What Goods and Services Will Be Produced?	10		
How Will the Goods and Services Be Produced?	10		
Who Will Receive the Goods and Services Produced?	10		
Centrally Planned Economies versus Market Economies	10		
The Modern "Mixed" Economy	11		
Efficiency and Equity	12		
1.3 Economic Models	12		
The Role of Assumptions in Economic Models	13		
Forming and Testing Hypotheses in Economic Models	13		
Positive and Normative Analysis	14		
Don't Let This Happen to You Don't Confuse Positive Analysis with Normative Analysis	15		
Economics as a Social Science	15		
Making the Connection: Should Medical School Be Free?	16		
1.4 Microeconomics and Macroeconomics	17		
1.5 A Preview of Important Economic Terms	17		
Conclusion	19		
An Inside Look: Smart Medical Devices—Right Before Your Very Eyes	20		
*Chapter Summary and Problems	22		
Key Terms, Summary, Review Questions, Problems and Applications			
Appendix: Using Graphs and Formulas	27		
Graphs of One Variable	28		
Graphs of Two Variables	29		
Slopes of Lines	30		
		Taking into Account More Than Two Variables on a Graph	30
		Positive and Negative Relationships	32
		Determining Cause and Effect	32
		Are Graphs of Economic Relationships Always Straight Lines?	34
		Slopes of Nonlinear Curves	34
		Formulas	34
		Formula for a Percentage Change	35
		Formulas for the Areas of a Rectangle and a Triangle	36
		Summary of Using Formulas	37
		Problems and Applications	37
		CHAPTER 2: Trade-offs, Comparative Advantage, and the Market System	40
		Managers at Tesla Motors Face Trade-offs	41
		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
		Absolute Advantage versus Comparative Advantage	50
		Comparative Advantage and the Gains from Trade	51
		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
		Making the Connection: Comparative Advantage, Opportunity Cost, and Housework	53
		2.3 The Market System	54
		The Circular Flow of Income	55
		The Gains from Free Markets	56
		The Market Mechanism	56
		Making the Connection: 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
		Making the Connection: An Elementary Case of Copyright	61
		Conclusion	63
		An Inside Look: You're Going to Need a MUCH Bigger Charging Station	64

*These end-of-chapter resource materials repeat in all chapters. Select chapters also include Real-Time Data Exercises.

CHAPTER 3: Where Prices Come From: The Interaction of Demand and Supply	72	Producer Surplus	113
How Smart Is Your Watch?	73	What Consumer Surplus and Producer Surplus Measure	114
3.1 The Demand Side of the Market	74	4.2 The Efficiency of Competitive Markets	115
Demand Schedules and Demand Curves	74	Marginal Benefit Equals Marginal Cost in Competitive Equilibrium	115
The Law of Demand	75	Economic Surplus	116
What Explains the Law of Demand?	75	Deadweight Loss	116
Holding Everything Else Constant: The <i>Ceteris Paribus</i> Condition	76	Economic Surplus and Economic Efficiency	117
Variables That Shift Market Demand	76	4.3 Government Intervention in the Market: Price Floors and Price Ceilings	117
Making the Connection: Are Smartwatches Substitutes for Smartphones?	77	Price Floors: Government Policy in Agricultural Markets	118
Making the Connection: Tough Times for Big Macs and Golf	78	Making the Connection: Price Floors in Labor Markets: The Debate over Minimum Wage Policy	119
A Change in Demand versus a Change in Quantity Demanded	81	Price Ceilings: Government Rent Control Policy in Housing Markets	120
Making the Connection: Forecasting the Demand for iPhones	81	Don't Let This Happen to You Don't Confuse "Scarcity" with "Shortage"	122
3.2 The Supply Side of the Market	82	Black Markets and Peer-to-Peer Sites	122
Supply Schedules and Supply Curves	83	Solved Problem 4.3: What's the Economic Effect of a Black Market in Renting Apartments?	122
The Law of Supply	83	The Results of Government Price Controls: Winners, Losers, and Inefficiency	124
Variables That Shift Market Supply	83	Making the Connection: Why Is Uber Such a Valuable Company?	124
A Change in Supply versus a Change in Quantity Supplied	86	Positive and Normative Analysis of Price Ceilings and Price Floors	125
3.3 Market Equilibrium: Putting Demand and Supply Together	86	4.4 The Economic Effect of Taxes	125
How Markets Eliminate Surpluses and Shortages	87	The Effect of Taxes on Economic Efficiency	125
Demand and Supply Both Count	88	Tax Incidence: Who Actually Pays a Tax?	126
Solved Problem 3.3: Demand and Supply Both Count: A Tale of Two Letters	88	Solved Problem 4.4: When Do Consumers Pay All of a Sales Tax Increase?	127
3.4 The Effect of Demand and Supply Shifts on Equilibrium	90	Making the Connection: Is the Burden of the Social Security Tax Really Shared Equally between Workers and Firms?	129
The Effect of Shifts in Supply on Equilibrium	90	Conclusion	131
The Effect of Shifts in Demand on Equilibrium	90	An Inside Look at Policy: Airbnb Customers to Pay Hotel Taxes	132
The Effect of Shifts in Demand and Supply over Time	90	Appendix: Quantitative Demand and Supply Analysis	141
Making the Connection: Demand and Supply Trashes Plastic Recycling	92	Demand and Supply Equations	141
Solved Problem 3.4: Can We Predict Changes in the Price and Quantity of Beef?	94	Calculating Consumer Surplus and Producer Surplus	142
Shifts in a Curve versus Movements along a Curve	96	PART 2: Markets in Action: Policy and Applications	
Don't Let This Happen to You Remember: A Change in a Good's Price Does <i>Not</i> Cause the Demand or Supply Curve to Shift	96	CHAPTER 5: Externalities, Environmental Policy, and Public Goods	146
Conclusion	97	Can Economic Policy Help Protect the Environment?	147
An Inside Look: Apple Watch Inspires Development of Complementary Products	98	5.1 Externalities and Economic Efficiency	148
CHAPTER 4: Economic Efficiency, Government Price Setting, and Taxes	108	The Effect of Externalities	148
The Sharing Economy, Phone Apps, and Rent Control	109		
4.1 Consumer Surplus and Producer Surplus	110		
Consumer Surplus	110		
Making the Connection: The Consumer Surplus from Broadband Internet Service	112		

Externalities and Market Failure	150	Don't Let This Happen to You Don't Confuse	
What Causes Externalities?	151	Inelastic with Perfectly Inelastic	189
5.2 Private Solutions to Externalities: The Coase Theorem	151	6.2 The Determinants of the Price Elasticity of Demand	191
The Economically Efficient Level of Pollution Reduction	152	Availability of Close Substitutes	191
Making the Connection: The Clean Air Act: How a Government Policy Reduced Infant Mortality	152	Passage of Time	191
The Basis for Private Solutions to Externalities	154	Luxuries versus Necessities	191
Don't Let This Happen to You Remember That It's the <i>Net</i> Benefit That Counts	155	Definition of the Market	191
Do Property Rights Matter?	156	Share of a Good in a Consumer's Budget	192
The Problem of Transactions Costs	156	Some Estimated Price Elasticities of Demand	192
The Coase Theorem	156	6.3 The Relationship between Price Elasticity of Demand and Total Revenue	193
Making the Connection: How Can You Defend Your Knees on a Plane Flight?	157	Elasticity and Revenue with a Linear Demand Curve	194
5.3 Government Policies to Deal with Externalities	158	Solved Problem 6.3: Price and Revenue Don't Always Move in the Same Direction	195
Imposing a Tax When There Is a Negative Externality	158	Making the Connection: Why Does Amazon Care about Price Elasticity?	196
Providing a Subsidy When There Is a Positive Externality	159	6.4 Other Demand Elasticities	197
Making the Connection: Should the Government Tax Cigarettes and Soda?	159	Cross-Price Elasticity of Demand	197
Solved Problem 5.3: Dealing with the Externalities of Car Driving	161	Income Elasticity of Demand	198
Command-and-Control versus Market-Based Approaches	163	Making the Connection: Price Elasticity, Cross-Price Elasticity, and Income Elasticity in the Market for Alcoholic Beverages	199
The End of the Sulfur Dioxide Cap-and-Trade System	163	6.5 Using Elasticity to Analyze the Disappearing Family Farm	200
Are Tradable Emission Allowances Licenses to Pollute?	164	Solved Problem 6.5: Using Price Elasticity to Analyze a Policy of Taxing Gasoline	201
Making the Connection: Can a Carbon Tax Reduce Global Warming?	164	6.6 The Price Elasticity of Supply and Its Measurement	202
5.4 Four Categories of Goods	165	Measuring the Price Elasticity of Supply	202
The Demand for a Public Good	166	Determinants of the Price Elasticity of Supply	203
The Optimal Quantity of a Public Good	168	Making the Connection: Why Are Oil Prices So Unstable?	203
Solved Problem 5.4: Determining the Optimal Level of Public Goods	169	Polar Cases of Perfectly Elastic and Perfectly Inelastic Supply	204
Common Resources	171	Using Price Elasticity of Supply to Predict Changes in Price	206
Conclusion	173	Conclusion	207
CHAPTER 6: Elasticity: The Responsiveness of Demand and Supply	182	CHAPTER 7: The Economics of Health Care	216
Do People Respond to Changes in the Price of Gasoline?	183	How Much Will You Pay for Health Insurance?	217
6.1 The Price Elasticity of Demand and Its Measurement	184	7.1 The Improving Health of People in the United States	218
Measuring the Price Elasticity of Demand	184	Changes over Time in U.S. Health	219
Elastic Demand and Inelastic Demand	185	Reasons for Long-Run Improvements in U.S. Health	219
An Example of Computing Price Elasticities	185	7.2 Health Care around the World	220
The Midpoint Formula	186	The U.S. Health Care System	220
Solved Problem 6.1: Calculating the Price Elasticity of Demand	187	Making the Connection: The Increasing Importance of Health Care in the U.S. Economy	222
When Demand Curves Intersect, the Flatter Curve Is More Elastic	188	The Health Care Systems of Canada, Japan, and the United Kingdom	223
Polar Cases of Perfectly Elastic and Perfectly Inelastic Demand	189	Comparing Health Care Outcomes around the World	224
		7.3 Information Problems and Externalities in the Market for Health Care	226
		Adverse Selection and the Market for "Lemons"	226

Asymmetric Information in the Market for Health Insurance 227

Don't Let This Happen to You Don't Confuse Adverse Selection with Moral Hazard 228

Externalities in the Market for Health Care 229

Should the Government Run the Health Care System? 231

7.4 The Debate over Health Care Policy in the United States 232

The Rising Cost of Health Care 232

Making the Connection: Are U.S. Firms Handicapped by Paying for Their Employees' Health Insurance? 234

Explaining Increases in Health Care Spending 235

Solved Problem 7.4: Recent Trends in Health Care 238

The Continuing Debate over Health Care Policy 239

Making the Connection: How Much Is That MRI Scan? 241

Conclusion 243

PART 3: Firms in the Domestic and International Economies

CHAPTER 8: Firms, the Stock Market, and Corporate Governance 250

Is Twitter the Next Facebook? 251

8.1 Types of Firms 252

Who Is Liable? Limited and Unlimited Liability Corporations Earn the Majority of Revenue and Profits 253

Making the Connection: Why Are Fewer Young People Starting Businesses? 254

The Structure of Corporations and the Principal-Agent Problem 255

8.2 How Firms Raise Funds 256

Sources of External Funds 256

Making the Connection: The Rating Game: Is the U.S. Treasury Likely to Default on Its Bonds? 257

Stock and Bond Markets Provide Capital—and Information 259

Don't Let This Happen to You When Twitter Shares Are Sold, Twitter Doesn't Get the Money 260

The Fluctuating Stock Market 260

Making the Connection: Why Are Many People Poor Stock Market Investors? 261

Solved Problem 8.2: Why Does Warren Buffett Like Mutual Funds? 262

8.3 Using Financial Statements to Evaluate a Corporation 263

The Income Statement 264

The Balance Sheet 265

8.4 Corporate Governance Policy and the Financial Crisis of 2007–2009 265

The Accounting Scandals of the Early 2000s 265

The Financial Crisis of 2007–2009 266

Did Principal-Agent Problems Help Cause the 2007–2009 Financial Crisis? 267

Solved Problem 8.4: Will Dodd-Frank Improve Corporate Governance? 268

Conclusion 269

Appendix: Tools to Analyze Firms' Financial Information 275

Using Present Value to Make Investment Decisions 275

Solved Problem 8A.1: How to Receive Your Contest Winnings 277

Using Present Value to Calculate Bond Prices 277

Using Present Value to Calculate Stock Prices 278

A Simple Formula for Calculating Stock Prices 279

Going Deeper into Financial Statements 280

Analyzing Income Statements 280

Analyzing Balance Sheets 281

CHAPTER 9: Comparative Advantage and the Gains from International Trade 284

President Obama, Nike, and Free Trade 285

9.1 The United States in the International Economy 286

The Importance of Trade to the U.S. Economy 287

Making the Connection: Would New Balance Be Helped or Hurt by the Trans-Pacific Partnership? 287

U.S. International Trade in a World Context 288

9.2 Comparative Advantage in International Trade 289

A Brief Review of Comparative Advantage 289

Comparative Advantage and Absolute Advantage 290

9.3 How Countries Gain from International Trade 291

Increasing Consumption through Trade 291

Solved Problem 9.3: The Gains from Trade 292

Why Don't We See Complete Specialization? 294

Does Anyone Lose as a Result of International Trade? 294

Don't Let This Happen to You Remember That Trade Creates Both Winners and Losers 295

Where Does Comparative Advantage Come From? 295

Comparative Advantage over Time: The Rise and Fall—and Rise—of the U.S. Consumer Electronics Industry 296

9.4 Government Policies That Restrict International Trade 296

Tariffs 297

Quotas and Voluntary Export Restraints 299

Measuring the Economic Effect of the Sugar Quota 300

Solved Problem 9.4: Measuring the Economic Effect of a Quota 301

The High Cost of Preserving Jobs with Tariffs and Quotas 302

Making the Connection: Smoot-Hawley, the Politics of Tariffs, and the Price of Protecting a Vanishing Industry 302

Gains from Unilateral Elimination of Tariffs and Quotas 304

Other Barriers to Trade 304

9.5 The Arguments over Trade Policies and Globalization 305

- Why Do Some People Oppose the World Trade Organization? 305
- Making the Connection:** Protecting Consumer Health or Protecting U.S. Firms from Competition? 307
- Dumping 308
- Positive versus Normative Analysis (Once Again) 308
- Conclusion** 309

PART 4: Microeconomic Foundations: Consumers and Firms

CHAPTER 10: Consumer Choice and Behavioral Economics 318

J.C. Penney Customers Didn't Buy into "Everyday Low Prices" 319

10.1 Utility and Consumer Decision Making 320

An Overview of the Economic Model of Consumer Behavior 320

Utility 320

The Principle of Diminishing Marginal Utility 321

The Rule of Equal Marginal Utility per Dollar Spent 321

Solved Problem 10.1: Finding the Optimal Level of Consumption 324

What if the Rule of Equal Marginal Utility per Dollar Does Not Hold? 325

Don't Let This Happen to You Equalize Marginal Utilities *per Dollar* 326

The Income Effect and Substitution Effect of a Price Change 327

10.2 Where Demand Curves Come From 328

Making the Connection: Are There Any Upward-Sloping Demand Curves in the Real World? 330

10.3 Social Influences on Decision Making 331

The Effects of Celebrity Endorsements 331

Network Externalities 332

Does Fairness Matter? 333

Making the Connection: Is Uber Price Gouging? 336

10.4 Behavioral Economics: Do People Make Their Choices Rationally? 337

Pitfalls in Decision Making 337

Making the Connection: A Blogger Who Understands the Importance of Ignoring Sunk Costs 339

The Behavioral Economics of Shopping 340

Making the Connection: J.C. Penney Meets Behavioral Economics 341

Conclusion 343

Appendix: Using Indifference Curves and Budget Lines to Understand Consumer Behavior 350

Consumer Preferences 350

Indifference Curves 350

The Slope of an Indifference Curve 351

Can Indifference Curves Ever Cross? 351

The Budget Constraint 352

Choosing the Optimal Consumption of Pizza and Coke 353

Making the Connection: Dell Determines the Optimal Mix of Products 354

Deriving the Demand Curve 355

Solved Problem 10A.1: When Does a Price Change Make a Consumer Better Off? 356

The Income Effect and the Substitution Effect of a Price Change 358

How a Change in Income Affects Optimal Consumption 359

The Slope of the Indifference Curve, the Slope of the Budget Line, and the Rule of Equal Marginal Utility per Dollar Spent 359

The Rule of Equal Marginal Utility per Dollar Spent Revisited 360

CHAPTER 11: Technology, Production, and Costs 364

Will the Cost of MOOCs Revolutionize Higher Education? 365

11.1 Technology: An Economic Definition 366

Making the Connection: UPS Uses Technology to Deal with a Surge in Holiday Packages 366

11.2 The Short Run and the Long Run in Economics 367

The Difference between Fixed Costs and Variable Costs 367

Making the Connection: Fixed Costs in the Publishing Industry 368

Implicit Costs versus Explicit Costs 368

The Production Function 369

A First Look at the Relationship between Production and Cost 370

11.3 The Marginal Product of Labor and the Average Product of Labor 371

The Law of Diminishing Returns 371

Graphing Production 372

Making the Connection: Adam Smith's Famous Account of the Division of Labor in a Pin Factory 373

The Relationship between Marginal Product and Average Product 373

An Example of Marginal and Average Values: College Grades 374

11.4 The Relationship between Short-Run Production and Short-Run Cost 375

Marginal Cost 375

Why Are the Marginal and Average Cost Curves U Shaped? 375

Solved Problem 11.4: Calculating Marginal Cost and Average Cost 377

11.5 Graphing Cost Curves 378

11.6 Costs in the Long Run 380

Economies of Scale	380
Long-Run Average Cost Curves for Automobile Factories	381
Solved Problem 11.6: Using Long-Run Average Cost Curves to Understand Business Strategy	381
Making the Connection: The Colossal River Rouge: Diseconomies of Scale at Ford Motor Company	383
Don't Let This Happen to You Don't Confuse Diminishing Returns with Diseconomies of Scale	384
Conclusion	385
Appendix: Using Isoquants and Isocost Lines to Understand Production and Cost	393
Isoquants	393
An Isoquant Graph	393
The Slope of an Isoquant	394
Isocost Lines	394
Graphing the Isocost Line	394
The Slope and Position of the Isocost Line	394
Choosing the Cost-Minimizing Combination of Capital and Labor	396
Different Input Price Ratios Lead to Different Input Choices	396
Solved Problem 11A.1: Firms Responding to Differences in Input Price Ratios	397
Another Look at Cost Minimization	398
Solved Problem 11A.2: Determining the Optimal Combination of Inputs	399
Making the Connection: Do National Football League Teams Behave Efficiently?	400
The Expansion Path	401

PART 5: Market Structure and Firm Strategy

CHAPTER 12: Firms in Perfectly Competitive Markets	406
Are Cage-Free Eggs the Road to Riches?	407
12.1 Perfectly Competitive Markets	409
A Perfectly Competitive Firm Cannot Affect the Market Price	409
The Demand Curve for the Output of a Perfectly Competitive Firm	410
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	410
12.2 How a Firm Maximizes Profit in a Perfectly Competitive Market	411
Revenue for a Firm in a Perfectly Competitive Market	412
Determining the Profit-Maximizing Level of Output	412
12.3 Illustrating Profit or Loss on the Cost Curve Graph	414
Showing Profit on a Graph	415

Solved Problem 12.3: Determining Profit-Maximizing Price and Quantity	416
Don't Let This Happen to You Remember That Firms Maximize Their Total Profit, Not Their Profit per Unit	418
Illustrating When a Firm Is Breaking Even or Operating at a Loss	418
Making the Connection: Losing Money in the Solar Panel Industry	419
12.4 Deciding Whether to Produce or to Shut Down in the Short Run	420
The Supply Curve of a Firm in the Short Run	421
Solved Problem 12.4: When to Shut Down an Oil Well	422
The Market Supply Curve in a Perfectly Competitive Industry	423
12.5 "If Everyone Can Do It, You Can't Make Money at It": The Entry and Exit of Firms in the Long Run	423
Economic Profit and the Entry or Exit Decision	424
Long-Run Equilibrium in a Perfectly Competitive Market	427
The Long-Run Supply Curve in a Perfectly Competitive Market	427
Making the Connection: In the Apple Apps Store, Easy Entry Makes the Long Run Pretty Short	429
Increasing-Cost and Decreasing-Cost Industries	429
12.6 Perfect Competition and Efficiency	430
Productive Efficiency	430
Solved Problem 12.6: How Productive Efficiency Benefits Consumers	430
Allocative Efficiency	432
Conclusion	433

CHAPTER 13: Monopolistic Competition: The Competitive Model in a More Realistic Setting	442
Is Chipotle the New McDonald's?	443
13.1 Demand and Marginal Revenue for a Firm in a Monopolistically Competitive Market	444
The Demand Curve for a Monopolistically Competitive Firm	444
Marginal Revenue for a Firm with a Downward-Sloping Demand Curve	444
13.2 How a Monopolistically Competitive Firm Maximizes Profit in the Short Run	446
Solved Problem 13.2: Does Minimizing Cost Maximize Profit at Apple?	448
13.3 What Happens to Profits in the Long Run?	449
How Does the Entry of New Firms Affect the Profits of Existing Firms?	449
Don't Let This Happen to You Don't Confuse Zero Economic Profit with Zero Accounting Profit	450
Making the Connection: Is the Trend toward Healthy Eating a Threat to Chipotle's Market Niche?	452

Is Zero Economic Profit Inevitable in the Long Run?	452	CHAPTER 15: Monopoly and Antitrust Policy	498
Solved Problem 13.3: Buffalo Wild Wings		A Monopoly on Lobster Dinners in Maine?	499
Increases Costs to Increase Demand	453	15.1 Is Any Firm Ever Really a Monopoly?	500
13.4 Comparing Monopolistic Competition and Perfect Competition	455	Making the Connection: Is the NCAA a Monopoly?	500
Excess Capacity under Monopolistic Competition	455	15.2 Where Do Monopolies Come From?	502
Is Monopolistic Competition Inefficient?	456	Government Action Blocks Entry	502
How Consumers Benefit from Monopolistic Competition	456	Making the Connection: Does Hasbro Have a Monopoly on Monopoly?	503
Making the Connection: Are All Cupcakes the Same?	456	Control of a Key Resource	504
13.5 How Marketing Differentiates Products	457	Making the Connection: Are Diamond Profits Forever? The De Beers Diamond Monopoly	504
Brand Management	457	Network Externalities	505
Advertising	458	Natural Monopoly	506
Defending a Brand Name	458	15.3 How Does a Monopoly Choose Price and Output?	507
13.6 What Makes a Firm Successful?	458	Marginal Revenue Once Again	507
Making the Connection: Is Being the First Firm in the Market a Key to Success?	459	Profit Maximization for a Monopolist	509
Conclusion	461	Solved Problem 15.3: Finding the Profit-Maximizing Price and Output for a Cable Monopoly	510
 		Don't Let This Happen to You Don't Assume That Charging a Higher Price Is Always More Profitable for a Monopolist	511
CHAPTER 14: Oligopoly: Firms in Less Competitive Markets	470	15.4 Does Monopoly Reduce Economic Efficiency?	511
Apple, Spotify, and the Music Streaming Revolution	471	Comparing Monopoly and Perfect Competition	511
14.1 Oligopoly and Barriers to Entry	472	Measuring the Efficiency Losses from Monopoly	512
Barriers to Entry	473	How Large Are the Efficiency Losses Due to Monopoly?	513
Making the Connection: Hard Times in Atlantic City	475	Market Power and Technological Change	514
14.2 Game Theory and Oligopoly	476	15.5 Government Policy toward Monopoly	514
A Duopoly Game: Price Competition between Two Firms	476	Antitrust Laws and Antitrust Enforcement	514
Firm Behavior and the Prisoner's Dilemma	478	Making the Connection: Did Apple Violate the Law in Pricing e-Books?	515
Don't Let This Happen to You Don't Misunderstand Why Each Firm Ends Up Charging a Price of \$9.99	478	Mergers: The Trade-off between Market Power and Efficiency	517
Solved Problem 14.2: Is Same-Day Delivery a Prisoner's Dilemma for Walmart and Amazon?	478	The Department of Justice and FTC Merger Guidelines	518
Can Firms Escape the Prisoner's Dilemma?	479	Regulating Natural Monopolies	520
Making the Connection: Do Airlines Collude on Capacity to Keep Prices High?	481	Solved Problem 15.5: What Should Your College Charge for a MOOC?	521
Cartels: The Case of OPEC	482	Conclusion	523
14.3 Sequential Games and Business Strategy	484	 	
Deterring Entry	484	CHAPTER 16: Pricing Strategy	530
Solved Problem 14.3: Is Deterring Entry Always a Good Idea?	486	Walt Disney Discovers the Magic of Big Data	531
Bargaining	486	16.1 Pricing Strategy, the Law of One Price, and Arbitrage	532
14.4 The Five Competitive Forces Model	488	Arbitrage	532
Competition from Existing Firms	488	Solved Problem 16.1: Is Arbitrage Just a Rip-off?	533
The Threat from Potential Entrants	488	Why Don't All Firms Charge the Same Price?	533
Competition from Substitute Goods or Services	489	16.2 Price Discrimination: Charging Different Prices for the Same Product	534
The Bargaining Power of Buyers	489	The Requirements for Successful Price Discrimination	534
The Bargaining Power of Suppliers	489		
Making the Connection: Can We Predict Which Firms Will Continue to Be Successful?	489		
Conclusion	491		

Don't Let This Happen to You Don't Confuse Price Discrimination with Other Types of Discrimination 535

An Example of Price Discrimination 535

Solved Problem 16.2: How Apple Uses Price Discrimination to Increase Profits 536

Airlines: The Kings of Price Discrimination 537

Making the Connection: Why Is the Price of a J.Crew Jacket So Much Lower at an Outlet Mall? 539

Perfect Price Discrimination 539

Price Discrimination across Time 541

Can Price Discrimination Be Illegal? 541

Making the Connection: The Internet Leaves You Open to Price Discrimination 542

16.3 Other Pricing Strategies 543

Odd Pricing: Why Is the Price \$2.99 Instead of \$3.00? 543

Why Do McDonald's and Other Firms Use Cost-Plus Pricing? 544

Making the Connection: Cost-Plus Pricing in the Publishing Industry 544

How Can Using Two-Part Tariffs Increase a Firm's Profits? 546

Conclusion 549

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

CHAPTER 17: The Markets for Labor and Other Factors of Production 556

Rio Tinto Mines with Robots 557

17.1 The Demand for Labor 558

The Marginal Revenue Product of Labor 558

Solved Problem 17.1: Hiring Decisions by a Firm That Is a Price Maker 560

The Market Demand Curve for Labor 561

Factors That Shift the Market Demand Curve for Labor 561

17.2 The Supply of Labor 562

The Market Supply Curve of Labor 563

Factors That Shift the Market Supply Curve of Labor 563

17.3 Equilibrium in the Labor Market 564

The Effect on Equilibrium Wages of a Shift in Labor Demand 565

Making the Connection: Is Investing in a College Education a Good Idea? 565

The Effect on Equilibrium Wages of a Shift in Labor Supply 566

Making the Connection: Should You Fear the Effect of Robots on the Labor Market? 567

17.4 Explaining Differences in Wages 569

Don't Let This Happen to You Remember That Prices and Wages Are Determined at the Margin 571

Making the Connection: Technology and the Earnings of "Superstars" 571

Compensating Differentials 572

Discrimination 573

Solved Problem 17.4: Is Passing "Comparable Worth" Legislation a Good Way to Close the Gap between Men's and Women's Pay? 574

Making the Connection: Does Greg Have an Easier Time Finding a Job Than Jamal? 576

Labor Unions 578

17.5 Personnel Economics 579

Should Workers' Pay Depend on How Much They Work or on How Much They Produce? 579

Making the Connection: A Better Way to Sell Contact Lenses 580

Other Considerations in Setting Compensation Systems 581

17.6 The Markets for Capital and Natural Resources 582

The Market for Capital 582

The Market for Natural Resources 583

Monopsony 584

The Marginal Productivity Theory of Income Distribution 584

Conclusion 585

CHAPTER 18: Public Choice, Taxes, and the Distribution of Income 594

Should the Government Use the Tax System to Reduce Inequality? 595

18.1 Public Choice 596

How Do We Know the Public Interest? Models of Voting 596

Government Failure? 598

Is Government Regulation Necessary? 600

18.2 The Tax System 600

An Overview of the U.S. Tax System 601

Progressive and Regressive Taxes 602

Making the Connection: Which Groups Pay the Most in Federal Taxes? 603

Marginal and Average Income Tax Rates 604

The Corporate Income Tax 604

International Comparison of Corporate Income Taxes 605

Evaluating Taxes 605

18.3 Tax Incidence Revisited: The Effect of Price Elasticity 607

Don't Let This Happen to You Don't Confuse Who Pays a Tax with Who Bears the Burden of the Tax 608

Making the Connection: Do Corporations Really Bear the Burden of the Federal Corporate Income Tax? 609

Solved Problem 18.3: The Effect of Price Elasticity on the Excess Burden of a Tax 610

18.4 Income Distribution and Poverty	611	Making the Connection: Who Are the 1 Percent, and How Do They Earn Their Incomes?	620
Measuring the Income Distribution and Measuring Poverty	611	Income Distribution and Poverty around the World	621
Showing the Income Distribution with a Lorenz Curve	612	Conclusion	623
Problems in Measuring Poverty and the Distribution of Income	613	Glossary	G-1
Solved Problem 18.4: What's the Difference between Income Mobility and Income Inequality?	615	Company Index	I-1
Explaining Income Inequality	617	Subject Index	I-3
Policies to Reduce Income Inequality	618	Credits	C-1

FLEXIBILITY CHART

The following chart helps you organize your syllabus based on your teaching preferences and objectives:

Core	Optional	Policy
Chapter 1: Economics: Foundations and Models	Chapter 1 Appendix: Using Graphs and Formulas	
Chapter 2: Trade-offs, Comparative Advantage, and the Market System		
Chapter 3: Where Prices Come From: The Interaction of Demand and Supply		
	Chapter 4 Appendix: Quantitative Demand and Supply Analysis	Chapter 4: Economic Efficiency, Government Price Setting, and Taxes
		Chapter 5: Externalities, Environmental Policy, and Public Goods
Chapter 6: Elasticity: The Responsiveness of Demand and Supply		
		Chapter 7: The Economics of Health Care
	Chapter 8: Firms, the Stock Market, and Corporate Governance	
	Chapter 8 Appendix: Tools to Analyze Firms' Financial Information	
Chapter 9: Comparative Advantage and the Gains from International Trade		

Core	Optional	Policy
	Chapter 10: Consumer Choice and Behavioral Economics	
	Chapter 10 Appendix: Using Indifference Curves and Budget Lines to Understand Consumer Behavior	
Chapter 11: Technology, Production, and Costs	Chapter 11 Appendix: Using Isoquants and Isocost Lines to Understand Production and Cost	
Chapter 12: Firms in Perfectly Competitive Markets		
Chapter 13: Monopolistic Competition: The Competitive Model in a More Realistic Setting		
Chapter 14: Oligopoly: Firms in Less Competitive Markets		
Chapter 15: Monopoly and Antitrust Policy		
	Chapter 16: Pricing Strategy	
Chapter 17: The Markets for Labor and Other Factors of Production		
		Chapter 18: Public Choice, Taxes, and the Distribution of Income

This page intentionally left blank

Our approach in this new edition remains what it was in the first edition, published more than 10 years ago: To provide students and instructors with 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 five editions of this book and who have made it one of the best-selling economics textbooks on the market.

Much has happened in the U.S. and world economies since we prepared the previous edition. We have incorporated many of these developments in the new real-world examples in this edition and also in the digital resources.

Digital Resources

While our basic approach of placing applications in the forefront of the discussion remains the same, this new edition has been thoroughly revised. We have a wide array of digital resources for students and instructors to use with either the eText version of the book or the MyEconLab supplement to the printed text. Below is an overview. Please see Preface pages 11–15 for more details.

Digital Features Located in MyEconLab

MyEconLab is a unique online course management, testing, and tutorial resource. It is included with the eText version of the book or as a supplement to the print book. Students and instructors will find the following online resources to accompany the sixth edition:

- **Videos.** There are more than 60 *Making the Connection* features in the book that provide real-world reinforcement of key concepts. Each feature is accompanied by a two- or three-minute video of the author explaining the key point of that *Making the Connection*. Related assessment is included with each video, so students can test their understanding. The goal of these videos is to summarize key content and bring the applications to life. In our experience, many students benefit from this type of online learning and assessment.
- **Concept Checks.** Each section of each learning objective concludes with an online Concept Check 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.
- **Animations.** Graphs are the backbone of introductory economics, but many students struggle to understand and work with them. Each of the 161 numbered figures in the text has a supporting animated version online. 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. Graded practice exercises are included with the animations. In our experience, many students benefit from this type of online learning.
- **Interactive Solved Problems.** Many students have difficulty applying economic concepts to solving problems. The goal of this digital resource is to help students overcome this hurdle by giving them a model of how to solve an economic problem by breaking it down step by step. Each of the 38 *Solved Problems* in the printed text is accompanied by

a similar problem online, 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. The goal is for students to build skills they can use to analyze real-world economic issues they hear and read about in the news. Each *Solved Problem* in MyEconLab and the digital eText also includes at least one additional graded practice exercise for students.

- **Graphs Updated with Real-Time Data from FRED.** The following figures 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: Figure 7.5, “Spending on Health Care around the World,” Figure 8.2, “Movements in Stock Market Indexes,” Figure 9.1, “International Trade Is of Increasing Importance to the United States,” and Figure 9.3, “International Trade as a Percentage of GDP.” Students can display a pop-up graph that shows new data plotted in the graph. The goal of this digital feature is to help students understand how to work with data and understand how including new data affects graphs.
- **Interactive Problems and Exercises Updated with Real-Time Data from FRED.** Chapter 8, “Firms, the Stock Market, and Corporate Governance,” includes four real-time data exercises that use the latest data from FRED. The goal of this digital feature is to help students become familiar with this key data source, learn how to locate data, and develop skills in interpreting data.

New to the Sixth Edition Chapters

- All companies in the chapter openers have been either replaced with new companies or updated with current information.
- Chapters 1–4 include new *An Inside Look* news articles and analyses to help students apply economic thinking to current events and policy debates. Additional news articles and analyses are updated weekly on MyEconLab.
- There are 25 new *Making the Connection* features to help students tie economic concepts to current events and policy issues.
- There are 8 new *Solved Problems*. This feature helps students break down and answer economic problems step by step.

New Chapter Openers, *Making the Connections*, *Solved Problems*, and *Inside Looks*

Here are the new or heavily revised chapter-opening business cases and accompanying *Inside Look* news articles. The business or issue introduced in the chapter opener is revisited within the chapter in either a *Making the Connection* or a *Solved Problem*. The following are new to this edition. Please see the detailed table of contents for the list of features for all chapters.

Chapter 1, “Economics: Foundations and Models,” opens with a new discussion of whether smart devices will revolutionize health care and closes with *An Inside Look* newspaper article and analysis of how Google is adding to its growing list of technological innovations by partnering with Swiss pharmaceutical company Novartis to develop smart contact lenses to help patients manage diabetes. New *Solved Problem 1.1* examines how managers at medical technology firm OraSure use marginal analysis to make an advertising decision. A new *Making the Connection* examines how opportunity costs can help us understand why many students have stopped attending college football games.

Chapter 2, “Trade-offs, Comparative Advantage, and the Market System,” opens with a new discussion of the manufacturing decisions managers at Tesla Motors face and

closes with *An Inside Look* that discusses the resources Apple has assembled to meet an aggressive plan to develop and produce an electric vehicle as early as 2020. A new *Making the Connection* uses Sir Arthur Conan Doyle's legendary character Sherlock Holmes to illustrate copyright laws for books and movies.

Chapter 3, "Where Prices Come From: The Interaction of Demand and Supply," opens with a new discussion of the market for smartwatches and closes with *An Inside Look* that examines how the Apple smartwatch is inspiring the development of other wearable devices. There are three new *Making the Connections*: "Are Smartwatches Substitutes for Smartphones?"; "Tough Times for Big Macs and Golf"; and "Demand and Supply Trashes Plastic Recycling."

Chapter 4, "Economic Efficiency, Government Price Setting, and Taxes," opens with an updated discussion of how Airbnb and the sharing economy affects rent control policy in San Francisco and closes with *An Inside Look* that examines why government officials in Malibu, California, imposed a tax on short-term rentals of apartments booked through Airbnb. A new *Making the Connection* examines why investors expect Uber to be very profitable.

Chapter 5, "Externalities, Environmental Policy, and Public Goods," opens with a new discussion of President Obama's Clean Power Plan. A new *Making the Connection* uses the frequent conflicts between passengers over reclining airline seats to illustrate property rights.

Chapter 6, "Elasticity: The Responsiveness of Demand and Supply," opens with a revised and updated discussion of the price elasticity of gasoline. A new *Making the Connection* discusses why Amazon cares about price elasticity.

Chapter 7, "The Economics of Health Care," opens with a new discussion of how the Patient Protection and Affordable Care Act of 2010 could affect the health care plan at T. Cain Grocery, which operates five Piggly Wiggly supermarkets in Alabama and Florida. New *Solved Problem 7.4* shows students how to use the demand and supply model to explain changes in health care spending. A new *Making the Connection* discusses the increasing importance of health care in the U.S. economy.

Chapter 8, "Firms, the Stock Market, and Corporate Governance," opens with a new discussion of Twitter and the benefits and costs of becoming a publicly owned firm. New *Solved Problem 8.2* analyzes why Warren Buffett likes mutual funds, and new *Solved Problem 8.4* discusses whether Dodd-Frank will improve corporate governance. There are two new *Making the Connections*: "Why Are Fewer Young People Starting Businesses?" and "Why Are Many People Poor Stock Market Investors?"

Chapter 9, "Comparative Advantage and the Gains from International Trade," opens with a new discussion of President Obama, Nike, and the Trans-Pacific Partnership (TPP). There are three new *Making the Connections*: "Would New Balance Be Helped or Hurt by the Trans-Pacific Partnership?"; "Smoot-Hawley, the Politics of Tariffs, and Protecting a Vanishing Industry"; and "Protecting Consumer Health or Protecting U.S. Firms from Competition?"

Chapter 10, "Consumer Choice and Behavioral Economics," opens with an updated discussion of a failed pricing strategy at J. C. Penney. A new *Making the Connection* discusses whether Uber is price gouging by charging more when demand for rides is high.

Chapter 11, "Technology, Production, and Costs," opens with a new discussion of MOOCs (massive open online courses). A new *Making the Connection* explains how UPS adopted new technology to deliver more packages with the same number of workers and planes. A new *Solved Problem* in the appendix discusses how firms respond to differences in input price ratios.

Chapter 12, “Firms in Perfectly Competitive Markets,” opens with a new discussion of cage-free eggs. New *Solved Problem 12.4* examines when managers should shut down an oil well.

Chapter 13, “Monopolistic Competition: The Competitive Model in a More Realistic Setting,” opens with a new discussion of the sources of Chipotle Mexican Grill’s success. There are two new *Making the Connections*: “Is the Trend toward Healthy Eating a Threat to Chipotle’s Market Niche?” and “Are All Cupcakes the Same?” New *Solved Problem 13.3* examines Buffalo Wild Wings’ strategy to differentiate its restaurants.

Chapter 14, “Oligopoly: Firms in Less Competitive Markets,” opens with a new discussion of Apple, Spotify, and the music streaming revolution. The chapter includes two new *Making the Connections*: “Hard Times in Atlantic City” and “Do Airlines Collude on Capacity to Keep Prices High?”

Chapter 15, “Monopoly and Antitrust Policy,” includes a new *Making the Connection* that examines whether the National Collegiate Athletic Association (NCAA) should be considered a monopoly. New *Solved Problem 15.5* shows students how to determine a pricing strategy for a MOOC (massive open online course).

Chapter 16, “Pricing Strategy,” opens with new coverage of Walt Disney’s MagicBands and how the company uses “big data” to help determine pricing. A new *Making the Connection* illustrates how clothing manufacturers can segment their sales by using outlet stores.

Chapter 17, “The Markets for Labor and Other Factors of Production,” opens with a new discussion of how Rio Tinto Mines has used robots to replace some workers. There are three new *Making the Connections*: “Is Investing in a College Education a Good Idea?”; “Should You Fear the Effect of Robots on the Labor Market?”; and “Technology and the Earnings of ‘Superstars.’”

Chapter 18, “Public Choice, Taxes, and the Distribution of Income,” opens with updated coverage of the debate about tax policy among the 2016 presidential candidates and includes new *Solved Problem 18.4* about income mobility. Section 18.4, “Income Distribution and Policy,” has been reorganized and includes the new subsection “Policies to Reduce Income Inequality.”

- To make room for the new content described earlier, we have cut approximately 21 *Making the Connections* and 5 *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.
- Figures and tables have been updated with the latest data available.
- Many of the end-of-chapter problems have been either replaced or updated. To most chapters, we have added one or two new problems that include graphs for students to analyze. Chapter 8 has a category called *Real-Time Data Exercises*.
- Finally, we have gone over the text literally line by line, tightening the discussion, rewriting unclear points, and making many small changes. 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.

The Foundation: Contextual Learning and Modern Organization

We believe a course is a success 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, *Making the*

Connection features, *An Inside Look* features, and end-of-chapter problems. This approach helps both business majors and liberal arts majors 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.

We are convinced that students learn to apply economic principles best if they are taught in a familiar context. Whether they become artists, social workers, bankers, or government employees, students benefit from understanding economics. Though business students will have many opportunities to see economic principles in action in various courses, liberal arts students may not. We therefore use many diverse real-world business and policy examples to illustrate economic concepts and develop educated consumers, voters, and citizens. Here are a few highlights of our approach to microeconomics:

- **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 health care 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 illegal drugs 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 other 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.

Special Features:

A Real-World, Hands-on Approach to Learning 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. Some of the chapter openers focus on the role of entrepreneurs in developing new products and bringing them to market. For example, Chapter 1 discusses Walter De Brouwer, the founder of Scanadu, which develops smart devices for health care; Chapter 2 discusses Elon Musk of Tesla Motors; and Chapter 13 discusses Steve Eells of Chipotle Mexican Grill. Here are a few examples of companies we discuss in the chapter openers:

- Tesla Motors (Chapter 2, “Trade-offs, Comparative Advantage, and the Market System”)
- Apple (Chapter 3, “Where Prices Come From: The Interaction of Demand and Supply”)
- Twitter (Chapter 8, “Firms, the Stock Market, and Corporate Governance”)

CHAPTER
3

Where Prices Come From: The Interaction of Demand and Supply

Chapter Outline and Learning Objectives

- 3.1 The Demand Side of the Market, page 74 List and describe the variables that influence demand.
- 3.2 The Supply Side of the Market, page 82 List and describe the variables that influence supply.
- 3.3 Market Equilibrium: Putting Demand and Supply Together, page 84 Use a graph to illustrate market equilibrium.
- 3.4 The Effect of Demand and Supply Shifts on Equilibrium, page 90 Use demand and supply graphs to predict changes in prices and quantities.



How Smart Is Your Watch?

Fashions can change quickly. For many years, most people wore wristwatches. With the popularity of cellphones in the 2000s, many people stopped wearing wristwatches—which was bad news for the watch industry. Once a product falls out of fashion, its sales are unlikely to return to past levels. Will watches prove an exception?

Until recently attempts to have watches do more than tell the time have not been successful. For instance, during the 1980s Texas Instruments and several other firms added small calculators to watches, but sales were limited. In 2004, Microsoft introduced the SPOT watch, which enabled users to receive instant messages, weather reports, and news headlines. But few consumers purchased it so the company stopped production of the watch in 2008. By 2013, several firms had introduced “smartwatches” that enabled users to make phone calls, text, take photos or videos, monitor their heart rates, and calculate calories burned while exercising.

In 2015, Apple introduced the Apple Watch, which combined most of the capabilities of the smartwatches from competing firms with popular features from Apple’s iPhone and iPad, such as access to the iTunes music store and Siri, the voice-activated personal assistant. The Apple Watch was immediately popular, with more than 2.5 million being sold during the first five weeks. These sales were higher than initial sales of Apple’s previous products—the iPod, iPhone, or iPad. More than 25 other firms entered the smartwatch market, hoping to participate in the rapid growth of a hot product.

But there are no guarantees in a market system. Would the Apple Watch and its competitors succeed in bringing the wristwatch back into style, or would they fall like the Texas Instruments calculator watch and the Microsoft SPOT watch? Smartwatches have relatively high prices, are somewhat complicated to use, and have small screens that make it difficult to display photos or maps. Ultimately, the success of the smartwatch is likely to depend on whether consumers like the applications, or “apps,” on these watches and are willing to wear wristwatches again.

The intense competition among firms selling smartwatches is a striking example of how the market responds to changes in technology and consumer tastes. Although competition is not always good news for firms trying to sell products, it is great news for consumers because it increases the available choice of products and lowers the prices consumers pay for those products.

AN INSIDE LOOK: on page 98 discusses how the Apple smartwatch is inspiring firms to develop other wearable devices.

Source: Daniel Math and Kevin McCullagh, “Will Smartwatches Be a Hit?” *Wall Street Journal*, May 20, 2015; and Mitchell Brumann, “Apple Watch Orders Estimated to Average 20,000 per Day in U.S. after Initial Surge,” *macrumors.com*, May 22, 2015.

Economics in Your Life

Will You Buy a Smartphone or a Smartwatch?

You use your smartphone mainly to text, read e-mail, and keep track of your appointments. Your smartphone is old, though, and you are thinking of buying a new one—or should you buy a smartwatch? What factors are most important in your decision: the features of a smartwatch versus a smartphone, or the relative prices of these products? If you know that you are soon going to get a raise at your job, would you be more likely to buy a smartwatch? As you read this chapter, try to answer these questions. You can check your answers against those we provide on page 97 at the end of this chapter.

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* feature presents an excerpt from an article, analysis of the article, a graph(s), and critical thinking questions. Additional articles are located on MyEconLab, where they are continuously updated.

AN INSIDE LOOK

Apple Watch Inspires Development of Complementary Products

WALL STREET JOURNAL

Don't Underestimate Smartwatches: Wearable Devices Are Poised to Become Central to the Tech Ecosystem

It's important to understand that like the iPhone before it, the Apple Watch isn't all that its name would imply. Let's call it what it is: a wrist-top computer.

Just as smartphones have become supercomputers in our pockets, the Apple Watch and its many competitors, including Android-powered devices from Motorola and Samsung Electronics, are poised to become something more. And it is their central place in a larger ecosystem of apps and hardware, rather than any one thing that has been shown of recently, that will make them indispensable.

When a company like Google or Apple deliberately creates a place for other companies to sell their own complementary wares, it is called a platform. Apple, more than Google, has mastered this art, having worked hard to give developers the tools to make apps for its mobile devices, plus a controlled environment in which to profit from them.

Fortunately, we don't have to wait for the Apple Watch and its app store to become available to get a glimpse of where things could be going. We have only to look at what pioneering companies in "wearables" are already working on, and then think about how their products will become a part of—or be absorbed

by—the Apple Watch and Android Wear ecosystems.

"The vision of Sensors is that the garment is the next ultra personal computer," says Sensoria CEO David Vignos. To illustrate his point, he rolls up his pants leg to show me a working prototype of the world's first smart sock.

I know, it sounds ridiculous. But, as he explains, with the help of an iPhone app that visualizes wireless signals sent by indifferently thin pressure sensors in the sock, it is good for runners who want to reduce their chance of injury. It is also potentially useful for monitoring the health of the elderly; small changes in gait are surprisingly predictive of other health issues.

And yes, the smart sock is washable.

Sensoria also makes a smart bra and smart shirt, both of which can measure heart rate. And here's where things get really interesting: For all makers of wearables, which until recently have been dominated by the glorified pedometers known as fitness bands, fitness applications are just the beginning.

Using a few more of the same sensors it already carries, Sensoria's shirt could measure not just the frequency but the pattern of a wearer's heartbeat. Mr. Vignos tells me, like the fingertip sensor on new smartwatches, the unique shape of the electrical signals generated by our hearts are a biometric. Add in a payment terminal not dissimilar from the ones that will roll out with Apple Pay, and the wearers of a Sensoria undershirt could soon find herself verifying payment for her next coffee via technology in her torso.

During Apple's presentation, Apple Vice President Kevin Lynch announced that BMW has developed an app for the Apple Watch that will allow users to lock and unlock their BMW i-series electric vehicles. And Mr. Martin told me that new Bluetooth-enabled locks from companies like Locktron and Kwikset mean that the moment you walk up to a door while sporting a recognized wearable, it can unlock without a nudge.

Wearables won't just appeal to fitness nuts and quantified-self geeks. They will appeal to everyone, because they will be the primary, perhaps even the sole way we identify ourselves to a world full of smart objects.

Established makers of wearables have seen this trend and are already getting in front of it. On the same day that Apple announced its watch, Jawbone, maker of the UP wristband, said that it was opening up its quantified-self software to that anyone could connect it with devices other than the UP—including the Apple Watch.

On its other words, amid the hype about the Apple Watch being a fitness device, or a stopwatch, or a status symbol, it is the applications that Apple and others aren't even talking about, the ones that are thought up by countless developers jumping on board the platform, that will make us wonder how we ever got by without them.

Key Points in the Article

The introduction of the Apple Watch has inspired a number of companies to develop products that can utilize the smartwatch's technology. From the wearable technology of Sensoria's sensor-enhanced clothing to convenience items like Bluetooth-enabled door locks, these complementary products will allow consumers to use their smartwatches in new ways, including monitoring their health, making online purchases, and unlocking their front doors. In our technology-driven society, as more products and apps are developed for use with smartwatches, consumers could come to view these watches as a necessity rather than a luxury, which is what happened with smartphones.

Analyzing the News

Smartwatches like the Apple Watch are part of the relatively new product category of wearable technology. As with smartphones, a large part of the success of smartwatches will depend on the availability of desirable complementary products. One variable that affects market demand for a product is the price of related goods. If the price of a complement decreases, market demand for the original product will increase, and if the price of a complement increases, market demand for the original product will decrease.

Smart shirts are wearable technology garments that will sync with smartwatches, so the two products are used together and are therefore complements. Suppose the figure below illustrates supply and demand for smart shirts. In 2016, the most basic smartwatch model had a price of about \$350, and at this price, the demand for smart shirts is represented by demand curve D_1 , with an equilibrium price of P_1 and an equilibrium quantity of Q_1 . If the price of smartwatches increases, this increase would, holding everything else constant, result in a decrease in demand for smart shirts. The demand curve would shift to the left, from D_1 to D_2 , resulting in a decrease in the equilibrium price from P_1 to P_2 and a decrease in the equilibrium quantity from Q_1 to Q_2 .

If the price of smartwatches declines, the result will be an increase in demand for smart shirts. The demand curve would shift to the right, from D_1 to D_3 , resulting in an increase in the equilibrium price from P_1 to P_3 and an increase in the equilibrium quantity from Q_1 to Q_3 .

Clearly, more firms will enter the market to compete with existing firms. Some of these firms will offer new products, while other firms will produce goods that compete with existing products. Suppose another apparel manufacturer designs a product to compete with smart shirts. This new product would be a substitute for smart shirts and, all else being equal, changes in the price of this new substitute would change the demand for smart shirts.

In the figure below, an increase in the price of a substitute would, holding everything else constant, increase the demand for smart shirts. The demand curve would shift to the right, from D_1 to D_3 , resulting in an increase in the equilibrium price from P_1 to P_3 and an increase in the equilibrium quantity from Q_1 to Q_3 . A decrease in the price of a substitute would have the opposite effect, resulting in a decrease in demand for smart shirts. The demand curve would shift to the left, from D_1 to D_2 , resulting in a decrease in the equilibrium price from P_1 to P_2 and a decrease in the equilibrium quantity from Q_1 to Q_2 .

Thinking Critically

- Suppose a technological change allows firms to lower the cost of producing smart shirts. Explain if this change will affect the demand curve for smart shirts. How would this change affect the market for smartwatches?
- In 2016, smartwatch producers had difficulty filling the orders they received. Draw a demand and supply graph to illustrate this situation. All else equal, what would you expect to happen in this market if this situation persisted into the future, and how would this affect the market for complementary products like the smart shirt?

Economics in Your Life

After the chapter-opening real-world business case, we have added a personal dimension to the chapter opener with a feature titled *Economics in Your Life*, which asks students to consider how economics affects their lives. The feature piques the interest of students and emphasizes the connection between the material they are learning and their experiences.

Economics in Your Life

Will You Buy a Smartphone or a Smartwatch?

You use your smartphone mainly to text, read e-mail, and keep track of your appointments. Your smartphone is old, though, and you are thinking of buying a new one ... or should you buy a smartwatch? What factors are most important in your decision: the features of a smartwatch versus a smartphone, or the relative prices of these products? If you know that you are soon going to get a raise at your job, would you be more likely to buy a smartwatch? As you read this chapter, try to answer these questions. You can check your answers against those we provide on **page 97** at the end of this chapter.

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

Continued from page 73

Economics in Your Life

Will You Buy a Smartphone or a Smartwatch?

At the beginning of this chapter, we asked you to consider how you might choose between buying a smartwatch and buying a smartphone. There are certain activities, such as watching YouTube or Netflix, that you can do on a smartphone but not on a smartwatch. There are other activities, such as tracking calories burned during a workout, that are probably easier to do on a smartwatch. If you can engage in the activities you like most on either device, then you probably consider the two devices to be close substitutes, and you are likely to buy the one with the lower price. Suppose that you are currently leaning toward buying a smartphone because its price is lower than the price of a comparable smartwatch. If an increase in your income would cause you to change your decision and buy the smartwatch, then the smartphone is an inferior good for you.

The following are examples of the topics we cover in the *Economics in Your Life* feature:

- Will you buy a smartphone or a smartwatch? (Chapter 3, “Where Prices Come From: The Interaction of Demand and Supply”)
- Is your take-home pay affected by what your employer spends on your health insurance? (Chapter 7, “The Economics of Health Care”)
- Can You Operate a Successful Restaurant? (Chapter 13, “Monopolistic Competition: The Competitive Model in a More Realistic Setting”)

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 tied to select chapter-opening learning objectives. 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. Additional exercises in the end-of-chapter *Problems and Applications* section are tied to every *Solved Problem*.

94 CHAPTER 3 Where Prices Come From: The Interaction of Demand and Supply
The Effect of Demand and Supply Shifts on Equilibrium 95

Solved Problem 3.4 MyEconLab Interactive Annotation

Can We Predict Changes in the Price and Quantity of Beef?

Whether you like to eat hamburger or roast beef, the source of the meat is a rancher who raises cattle. A news story discussed how years of drought had raised the cost to ranchers of raising cattle. At the same time, consumer tastes have been changing, leading to a decline in the demand for beef. Use demand and supply graphs to illustrate your answers to the following questions:

- Can we use this information to be certain whether the equilibrium quantity of beef will increase or decrease?
- Can we use this information to be certain whether the equilibrium price of beef will increase or decrease?

Solving the Problem

Step 1: Review the chapter material. This problem is about how shifts in demand and supply curves affect the equilibrium price, so you may want to review the section “The Effect of Shifts in Demand and Supply over Time,” which begins on page 90.

Step 2: Answer part (a) using demand and supply analysis. You are given the information that consumer tastes have changed, leading to a decline in demand for beef. So, the demand curve for beef has shifted to the left. You are also given the information that the cost of raising beef has increased. So, the supply curve for beef has also shifted to the left. The following graph shows both these shifts:

As Table 3.3 on page 92 summarizes, if the demand curve and the supply curve both shift to the left, the equilibrium quantity must decrease. Therefore, we can answer part (a) by stating that we are certain that the equilibrium quantity of beef will decrease.

Step 3: Answer part (b) using demand and supply analysis. The graph we drew in step 2 shows the equilibrium price of beef increasing. But given the information provided, the following graph would also be correct:

Unlike the graph in step 2, which shows the equilibrium price increasing, this graph shows the equilibrium price decreasing. The uncertainty about whether the equilibrium price will increase or decrease is consistent with what Table 3.3 shows happens when the demand curve and the supply curve both shift to the left. Therefore, the answer to part (b) is that we cannot be certain whether the equilibrium price of beef will increase or decrease.

Extra Credit: During 2013 and 2014, the equilibrium quantity of beef decreased while the equilibrium price of beef increased. We can conclude that both the decrease in demand for beef and the decrease in the supply of beef contributed to the decline in beef consumption. That the price of beef rose indicates that the decrease in supply had a larger effect on equilibrium in the beef market than did the decrease in demand.

Source: Andrew Schmitz, “No Minors: High Beef Prices a Bless for Drought-Worried Ranchers,” *agri.com*, November 19, 2014 and U.S. Department of Agriculture, Inc.

Your Turn: For more practice, do related problems 4.7 and 4.8 on page 104 at the end of this chapter. MyEconLab Study Plan

Additional *Solved Problems* appear in the *Instructor’s Manuals*. In addition, the Test Item Files include problems tied to the *Solved Problems* in the main book.

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

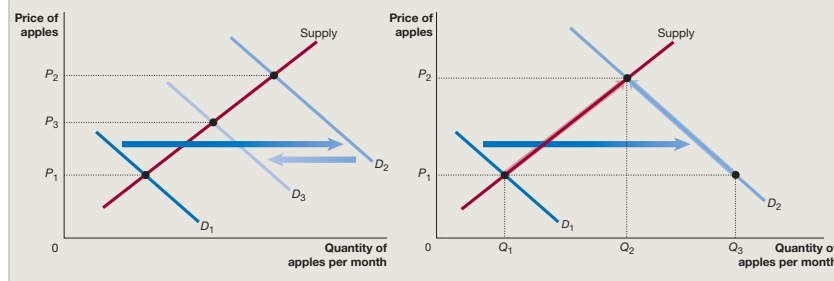
Suppose a student is asked to draw a demand and supply graph to illustrate how an increase in the price of oranges would affect the market for apples, with other variables being constant. He draws the graph on the left and explains it as follows: “Because apples and oranges are substitutes, an increase in the price of oranges will cause an initial shift to the right in the demand curve for apples, from D_1 to D_2 . However, because this initial shift in the demand curve for apples results in a higher price for apples, P_2 , consumers will find apples less desirable, and the demand curve will shift to the left, from D_2 to D_3 , resulting in a final equilibrium price of P_3 .” Do you agree or disagree with the student’s analysis? MyEconLab Study Plan

You should disagree. The student has correctly understood that an increase in the price of oranges will cause the demand curve for apples to shift to the right. But, the second demand curve shift the student describes,

from D_2 to D_3 , will not take place. Changes in the price of a product do not result in shifts in the product’s demand curve. Changes in the price of a product result only in movements along a demand curve.

The graph on the right shows the correct analysis. The increase in the price of oranges causes the demand curve for apples to increase from D_1 to D_2 . At the original price, P_1 , the increase in demand initially results in a shortage of apples equal to $Q_3 - Q_1$. But, as we have seen, a shortage causes the price to increase until the shortage is eliminated. In this case, the price will rise to P_2 , where both the quantity demanded and the quantity supplied are equal to Q_2 . Notice that the increase in price causes a decrease in the quantity demanded, from Q_3 to Q_2 , but does *not* cause a decrease in demand.

Your Turn: Test your understanding by doing related problems 4.13 and 4.14 on page 105 at the end of this chapter.



end-of-chapter problem to allow students to test their understanding of the topic discussed.

Don’t Let This Happen to You

We know from many years of teaching which concepts students find most difficult. Each chapter contains 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.

Making the Connection

Each chapter includes two to four *Making the Connection* features that provide real-world reinforcement of key concepts and help students learn how to interpret what they read on the Web and in newspapers. Most *Making the Connection* features use relevant, stimulating, and provocative news stories focused on businesses and policy issues. One-third of them are new to this edition, and most others have been updated. Several discuss health care, which remains a pressing policy issue. Each *Making the Connection* has at least one supporting

Making the Connection
MyEconLab Video

Are Smartwatches Substitutes for Smartphones?

Two products are rarely perfect substitutes because consumers may find them more or less useful for some purposes. As Apple and other firms began selling smartwatches, a key question they needed to answer was whether consumers considered smartwatches close substitutes for smartphones. You can use either a smartwatch or a smartphone to check the time, send a text, keep a list of appointments, or use a GPS map. But you need a smartphone if you want to surf the Web or watch a movie, while you are better off buying a smartwatch if you want to monitor your heartbeat or keep track of how many calories you are burning while exercising.



Is the smartwatch a hot new must-have gadget, even for people who already own a smartphone?

So smartwatches and smartphones are substitutes—but they aren't perfect substitutes. To correctly forecast sales and produce the correct quantity of smartwatches, firms that sell them need to evaluate how close substitutes consumers consider smartwatches and smartphones to be. Many people who might consider buying a smartwatch already own a smartphone. So the closer consumers consider the two products to be as substitutes, the less likely they are to buy a smartwatch in addition to a smartphone.

When Apple introduced the Apple Watch in 2015, sales were initially very strong, which would seem to indicate that many consumers believed that the unique features of the smartwatch made it worth buying, even if they owned a smartphone. Some analysts, though, wondered how large future sales would be after people who buy each new electronic device soon after it hits the market—early adopters—had made their purchases. One early reviewer of the Apple Watch noted that he was unsure “that I need this thing on my wrist every day.” Similarly, the *Economist* magazine offered the opinion, “Apple seems unlikely to turn its watch into the next big must-have gadget. ... People are unlikely to want to shell out ... \$350 ... for something with so few extra functions.”

Other industry observers were more optimistic about the size of the market for smartwatches. Writing in the *Wall Street Journal*, one analyst argued that smartwatches performed several functions faster or more conveniently than smartphones. He concluded, “Billions of consumers who own a smartphone are likely to consider purchasing a smartwatch.” Given these different evaluations, it wasn't surprising that forecasts of sales of the Apple Watch during its first year varied widely from 8 million to 41 million.

In the end, as with most new products, the success of smartwatches depends on whether consumers see them as filling a need that other products don't meet. In other words, the less close a substitute consumers believe smartwatches to be for smartphones, the more likely they are to buy a smartwatch.

Sources: Joshua Topolsky, “Apple Watch Review: You'll Want One, but You Don't Need One,” *bloomberg.com*, April 8, 2015; “The Time Machine,” *Economist*, March 9, 2015; and Daniel Matte and Kevin McCullagh, “Will Smartwatches Be a Hit?” *Wall Street Journal*, May 10, 2015.

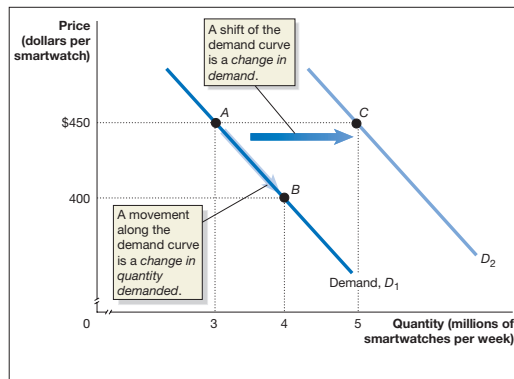
Your Turn: Test your understanding by doing related problem 1.12 on page 101 at the end of this chapter.

MyEconLab Study Plan

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)

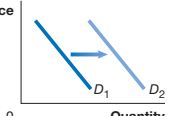
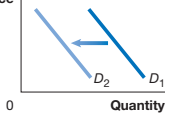
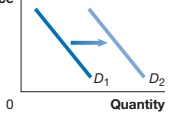
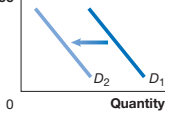
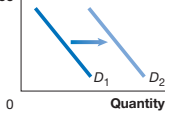
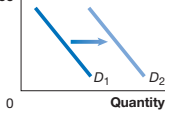
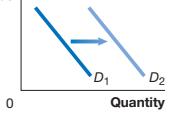


MyEconLab Animation

Figure 3.3

A Change in Demand versus a Change in Quantity Demanded

If the price of smartwatches falls from \$450 to \$400, the result will be a movement along the demand curve from point A to point B—an increase in quantity demanded from 3 million to 4 million. If consumers' incomes increase, or if another factor changes that makes consumers want more of the product at every price, the demand curve will shift to the right—an increase in demand. In this case, the increase in demand from D_1 to D_2 causes the quantity of smartwatches demanded at a price of \$450 to increase from 3 million at point A to 5 million at point C.

Table 3.1	An increase in ...	shifts the demand curve ...	because ...
Variables That Shift Market Demand Curves	income (and the good is normal)	 <p>The graph shows a coordinate system with 'Price' on the vertical axis and 'Quantity' on the horizontal axis. Two downward-sloping demand curves are shown: a darker blue curve labeled D_1 and a lighter blue curve labeled D_2. An arrow points from D_1 to D_2, indicating a rightward shift. The origin is marked with '0'.</p>	consumers spend more of their higher incomes on the good.
	income (and the good is inferior)	 <p>The graph shows a coordinate system with 'Price' on the vertical axis and 'Quantity' on the horizontal axis. Two downward-sloping demand curves are shown: a darker blue curve labeled D_1 and a lighter blue curve labeled D_2. An arrow points from D_1 to D_2, indicating a leftward shift. The origin is marked with '0'.</p>	consumers spend less of their higher incomes on the good.
	the price of a substitute good	 <p>The graph shows a coordinate system with 'Price' on the vertical axis and 'Quantity' on the horizontal axis. Two downward-sloping demand curves are shown: a darker blue curve labeled D_1 and a lighter blue curve labeled D_2. An arrow points from D_1 to D_2, indicating a rightward shift. The origin is marked with '0'.</p>	consumers buy less of the substitute good and more of this good.
	the price of a complementary good	 <p>The graph shows a coordinate system with 'Price' on the vertical axis and 'Quantity' on the horizontal axis. Two downward-sloping demand curves are shown: a darker blue curve labeled D_1 and a lighter blue curve labeled D_2. An arrow points from D_1 to D_2, indicating a leftward shift. The origin is marked with '0'.</p>	consumers buy less of the complementary good and less of this good.
	taste for the good	 <p>The graph shows a coordinate system with 'Price' on the vertical axis and 'Quantity' on the horizontal axis. Two downward-sloping demand curves are shown: a darker blue curve labeled D_1 and a lighter blue curve labeled D_2. An arrow points from D_1 to D_2, indicating a rightward shift. The origin is marked with '0'.</p>	consumers are willing to buy a larger quantity of the good at every price.
	population	 <p>The graph shows a coordinate system with 'Price' on the vertical axis and 'Quantity' on the horizontal axis. Two downward-sloping demand curves are shown: a darker blue curve labeled D_1 and a lighter blue curve labeled D_2. An arrow points from D_1 to D_2, indicating a rightward shift. The origin is marked with '0'.</p>	additional consumers result in a greater quantity demanded at every price.
	the expected price of the good in the future	 <p>The graph shows a coordinate system with 'Price' on the vertical axis and 'Quantity' on the horizontal axis. Two downward-sloping demand curves are shown: a darker blue curve labeled D_1 and a lighter blue curve labeled D_2. An arrow points from D_1 to D_2, indicating a rightward shift. The origin is marked with '0'.</p>	consumers buy more of the good today to avoid the higher price in the future.


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

All end-of-chapter material—*Summary*, *Review Questions*, and *Problems and Applications*—is grouped 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 in MyEconLab, 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 in MyEconLab. Using MyEconLab, 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 will allow 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*, *Making the Connection*, 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 for homework. The Test Item Files also include test questions that pertain to these special features.

Real-Time Data Exercises

Chapter 8 “Firms, the Stock Market, and Corporate Governance,” includes four *Real-Time Data Exercises* that help students become familiar with a key data source, learn how to locate data, and develop skills in interpreting data. *Real-Time Data Analysis (RTDA) Exercises*, marked with , allow students and instructors to use the very latest data from FRED.

Integrated Supplements

The authors and Pearson have worked together to integrate the text, print, and media resources to make teaching and learning easier.

MyEconLab

MyEconLab is a unique online course management, testing, and tutorial resource.

For the Instructor

Instructors can choose how much or how little time to spend setting up and using MyEconLab. Here is a snapshot of what instructors are saying about MyEconLab:


MyEconLab offers [students] a way to practice every week. They receive immediate feedback and a feeling of personal attention. As a result, my teaching has become more targeted and efficient.—Kelly Blanchard, Purdue University

Students tell me that offering them MyEconLab is almost like offering them individual tutors.—Jefferson Edwards, Cypress Fairbanks College

MyEconLab’s eText is great—particularly in that it helps offset the skyrocketing cost of textbooks. Naturally, students love that.—Doug Gehrke, Moraine Valley Community College

Each chapter contains two preloaded exercise sets that can be used to build an individualized study plan for each student. These study plan exercises contain tutorial resources, including instant feedback, links to the appropriate learning objective in the eText, pop-up definitions from the text, and step-by-step guided solutions, where appropriate. After the initial setup of the course by the instructor, student use of these materials requires no further instructor setup. The online grade book records each student’s performance and time spent on the tests and study plan and generates reports by student or chapter.

Alternatively, instructors can fully customize MyEconLab to match their course exactly, including reading assignments, homework assignments, video assignments, current news assignments, and quizzes and tests. Assignable resources include:

- Preloaded exercise assignments sets for each chapter include the student tutorial resources mentioned earlier.
- Preloaded quizzes for each chapter are unique to the text and not repeated in the study plan or homework exercise sets.
- Study plan problems are similar to the end-of-chapter problems and numbered exactly as in the book to make assigning homework easier.
- *Real-Time Data Analysis Exercises*, marked with , allow students and instructors to use the very latest data from FRED. By completing the exercises, students become familiar

with a key data source, learn how to locate data, and develop skills in interpreting data. In the eText available in MyEconLab, select figures labeled MyEconLab Real-time Data allow students to display a pop-up graph updated with real-time data from FRED.

- *Current News Exercises* provide a turnkey way to assign gradable news-based exercises in MyEconLab. Each week, Pearson scours the news, finds a current microeconomics article and a current macroeconomics article, creates exercises around these news articles, and adds them to MyEconLab. Assigning and grading current news-based exercises that deal with the latest micro and macro events and policy issues has never been more convenient.
- *Experiments in MyEconLab* provide a fun and engaging way to promote active learning and mastery of important economic concepts. Pearson's Experiments program is flexible, easy-to-assign, auto-graded, and available in Single and Multiplayer versions. Single-player experiments allow your students to play against virtual players from anywhere at any time, as long as they have an Internet connection. Multiplayer experiments allow you to assign and manage a real-time experiment with your class. Pre- and post-questions for each experiment are available for assignment in MyEconLab. For a complete list of available experiments, visit www.myeconlab.com.
- Test Item File questions allow you to assign quizzes or homework that look just like your exams.
- *Econ Exercise Builder* allows you to build customized exercises. Exercises include multiple-choice, graph drawing, and free-response items, many of which are generated algorithmically so that each time a student works them, a different variation is presented. MyEconLab grades every problem type except essays—even problems with graphs. When working homework exercises, students receive immediate feedback, with links to additional learning tools.

Customization and Communication

MyEconLab in MyLab/Mastering provides additional optional customization and communication tools. Instructors who teach distance-learning courses or very large lecture sections find the MyLab/Mastering format useful because they can upload course documents and assignments, customize the order of chapters, and use communication features such as Document Sharing, Chat, ClassLive, and Discussion Board.

For the Student

MyEconLab puts students in control of their learning through a collection of testing, practice, and study tools tied to the online, interactive version of the textbook and other media resources. Here is a snapshot of what students are saying about MyEconLab:

It was very useful because it had EVERYTHING, from practice exams to exercises to reading. Very helpful.—student, Northern Illinois University

I would recommend taking the quizzes on MyEconLab because it gives you a true account of whether or not you understand the material.—student, Montana Tech

It made me look through the book to find answers, so I did more reading.—student, Northern Illinois University

Students can study on their own or can complete assignments created by their instructor. In MyEconLab's structured environment, students practice what they learn, test their understanding, and pursue a personalized study plan generated from their performance on sample tests and from quizzes created by their instructors. In Homework or Study Plan mode, students have access to a wealth of tutorial features, including:

- Instant feedback on exercises that helps students understand and apply the concepts
- Links to the eText to promote reading of the text just when the student needs to revisit a concept or an explanation

- Step-by-step guided solutions that force students to break down a problem in much the same way an instructor would do during office hours
- Pop-up key term definitions from the eText to help students master the vocabulary of economics
- A graphing tool that is integrated into the various exercises to enable students to build and manipulate graphs to better understand how concepts, numbers, and graphs connect

Additional MyEconLab Tools

MyEconLab includes the following additional features:

- **Enhanced eText.** Students actively read and learn, and with more engagement than ever before, through embedded and auto-graded practice, real-time data-graph updates, animations, author videos, and more.
- **Print upgrade.** For students who wish to complete assignments in MyEconLab but read in print, Pearson offers registered MyEconLab users a loose-leaf version of the print text at a significant discount.
- **Glossary flashcards.** Every key term is available as a flashcard, allowing students to quiz themselves on vocabulary from one or more chapters at a time.

MyEconLab content has been created through the efforts of Chris Annala, State University of New York–Geneseo; Charles Baum, Middle Tennessee State University; Peggy Dalton, Frostburg State University; Carol Dole, Jacksonville University; David Foti, Lone Star College; Sarah Ghosh, University of Scranton; Satyajit Ghosh, University of Scranton; Melissa Honig, Pearson Education; Woo Jung, University of Colorado; Courtney Kamauf, Pearson Education; Chris Kauffman, University of Tennessee–Knoxville; Russell Kellogg, University of Colorado–Denver; Noel Lotz, Pearson Education; Katherine McCann, University of Delaware; Daniel Mizak, Frostburg State University; Christine Polek, University of Massachusetts–Boston; Mark Scanlan, Stephen F. Austin State University; Leonie L. Stone, State University of New York–Geneseo; and Bert G. Wheeler, Cedarville University.

Other Resources for the Instructor

Instructor's Manuals

Edward Scahill of the University of Scranton prepared the *Instructor's Manual*, which includes chapter-by-chapter summaries, learning objectives, extended examples and class exercises, teaching outlines incorporating key terms and definitions, teaching tips, topics for class discussion, new *Solved Problems*, new *Making the Connection* features, and solutions to all review questions, problems, and real-time-data exercises in the book. The *Instructor's Manual* is available in print and for download from the Instructor's Resource Center (www.pearsonhighered.com/hubbard). The solutions to the end-of-chapter review questions and problems were prepared by the authors and Edward Scahill of the University of Scranton.

Two Test Item Files

Randy Methenitis of Richland College prepared Test Item File, which includes 4,000 multiple-choice, true/false, short-answer, and graphing questions. There are questions to support each key feature in the book. The Test Item File is available in print and for download from the Instructor's Resource Center (www.pearsonhighered.com/hubbard). Test questions are annotated with the following information:

- **Difficulty**—1 for straight recall, 2 for some analysis, 3 for complex analysis
- **Type**—multiple-choice, true/false, short-answer, essay

- **Topic**—the term or concept the question supports
- **Learning outcome**
- **AACSB** (see the description that follows)
- **Page number** in the text
- **Special feature in the main book**—chapter-opening business example, *Economics in Your Life*, *Solved Problem*, *Making the Connection*, and *Don't Let This Happen to You*

The Association to Advance Collegiate Schools of Business (AACSB)

The Test Item File author has connected select questions to the general knowledge and skill guidelines found in the AACSB Assurance of Learning Standards.

What Is the AACSB?

The 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 makes initial accreditation decisions and conducts periodic reviews to promote continuous quality improvement in management education. Pearson Education is a proud member of the AACSB and is pleased to provide advice to help you apply AACSB Assurance of Learning Standards.

What Are AACSB Assurance of Learning Standards?

One of the criteria for AACSB accreditation is the quality of curricula. Although no specific courses are required, 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 Skills
- Information Technology
- Diverse and Multicultural Work
- Reflective Thinking
- Application of Knowledge

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.

How Can Instructors Use the AACSB Tags?

Tagged questions help you measure whether students are grasping the course content that aligns with the AACSB guidelines noted earlier. This in turn may suggest enrichment activities or other educational experiences to help students achieve these skills.

TestGen

The computerized TestGen package allows instructors to customize, save, and generate classroom tests. The test program permits instructors to edit, add, or delete questions from the Test Item Files; analyze test results; and organize a database of tests and student results. This software allows for extensive flexibility and ease of use. It provides many options for organizing and displaying tests, along with search and sort features. The software and the Test Item Files can be downloaded from the Instructor's Resource Center (www.pearsonhighered.com/hubbard).

PowerPoint Lecture Presentation

Three sets of PowerPoint slides, prepared by Paul Holmes of Ashland University, are available:

1. 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.
2. 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. Instructors can download these PowerPoint presentations from the Instructor’s Resource Center (www.pearsonhighered.com/hubbard).
3. A student version of the PowerPoint slides is available as .pdf files. This version allows students to print the slides and bring them to class for note taking. Instructors can download these PowerPoint presentations from the Instructor’s Resource Center (www.pearsonhighered.com/hubbard).

Learning Catalytics

Learning Catalytics is a “bring your own device” Web-based student engagement, assessment, and classroom intelligence system. This system generates classroom discussion, guides lectures, and promotes peer-to-peer learning with real-time analytics. Students can use any device to interact in the classroom, engage with content, and even draw and share graphs.

To learn more, ask your local Pearson representative or visit www.learningcatalytics.com.

Digital Interactives

Focused on a single core topic and organized in progressive levels, each interactive immerses students in an assignable and auto-graded activity. Digital Interactives are also engaging lecture tools for traditional, online, and hybrid courses, many incorporating real-time data, data displays, and analysis tools for rich classroom discussions.

Other Resources for the Student

In addition to MyEconLab, Pearson provides the following resources.

Dynamic Study Modules

With a focus on key topics, these modules work by continuously assessing student performance and activity in real time and, using data and analytics, provide personalized content to reinforce concepts that target each student’s particular strengths and weaknesses.

PowerPoint Slides

For student use as a study aid or note-taking guide, PowerPoint slides, prepared by Paul Holmes of Ashland University, can be downloaded from MyEconLab or the Instructor’s Resource Center and made available to students. The slides include:

- All graphs, tables, and equations in the text
- Figures in step-by-step mode and automated modes, using a single click per graph curve
- End-of-chapter key terms with hyperlinks to relevant slides

Accuracy Review Board and Reviewers

The guidance and recommendations of the following instructors helped us develop the revision plans for the sixth 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 teach a whole new generation of students 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
 Clare Battista, California Polytechnic State University
 Doris Bennett, Jacksonville State University
 Harry Ellis, University of North Texas
 Robert Gillette, University of Kentucky
 Edward T. Gullason, formerly, Dowling College
 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:

Sindy Abadie, Southwest Tennessee Community College
 Olugbenga Ajilore, The University of Toledo

Robert Berman, American University
 Benjamin Blair, Columbus State University
 William Browning, Florida Gulf Coast University
 Eliane P. Catilina, Graduate School USA
 Lisa Citron, Cascadia College
 Erik Craft, University of Richmond
 Eva Dziadula, University of Notre Dame
 Christi Esquivel, Navarro College
 Mary Flannery, University of Notre Dame
 Alan S. Fudge, Linn-Benton Community College
 Ward Hooker, Central Community College
 Michael Jones, University of Cincinnati
 Janice Kinghorn, Miami University
 Tom Lehman, Indiana Wesleyan University
 Svitlana Maksymenko, University of Pittsburgh
 Robin S. McCutcheon, Marshall University College of
 Business
 Charles Meyrick, Housatonic Community College
 Victoria Willis-Miller, Piedmont Technical College
 Fola Odebunmi, Cypress College
 Sheri Perez, College of Southern Nevada
 Mehul Rangwala, University of Phoenix
 Nicole L. Cornell Sadowski, York College of Pennsylvania
 Edward Scahill, University of Scranton
 Richard Lee Slotkin, Pasadena City College
 Ralph Sonenshine, American University
 Laura Storino, Rowan University
 John Tommasi, University of Massachusetts–Lowell
 Christopher Westley, Jacksonville State University
 Mark Witte, Northwestern University

Previous Edition Class Testers, Accuracy Reviewers, and Consultants

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 comprehensive:

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 Elgatian, St. Ambrose University
 Patricia A. Freeman, Jackson State University
 Robert Godby, University of Wyoming
 Frank Gunter, Lehigh University
 Ahmed Ispahani, University of LaVerne
 Brendan Kennelly, Lehigh University and National Uni-
 versity 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

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
 Mohammad Bajwa, Northampton Community College
 Cynthia Bansak, St. Lawrence University
 Hamid Bastin, Shippensburg 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 Giuli, Diablo Valley College
 Mark Gius, Quinnipiac University
 Robert Godby, University of Wyoming
 William L. Goffe, Pennsylvania State University
 Anthony Gyapong, Pennsylvania State University—
 Abington
 Travis Hayes, University of Tennessee–Chattanooga
 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 Scahill, University of Scranton
 Mark V. Siegler, California State University–Sacramento
 Rachel Small, University of Colorado–Boulder
 Stephen Smith, Bakersfield College
 Rajeev Sooreea, Pennsylvania State University–Altoona
 Rebecca Stein, University of Pennsylvania
 Ed Steinberg, New York University
 Michael Stone, Quinnipiac University
 Arlena Sullivan, Jones County Junior College
 Wendine Thompson–Dawson, University of Utah
 Julianne Treme, University of North Carolina–
 Wilmington
 Robert Whaples, Wake Forest University

Consultant Boards

We received guidance from a dedicated consultant board during the development of the previous editions at several critical

junctions. 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. Goffe, 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

Reviewers

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

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. Swofford, University of Southern Alabama

ARIZONA

Doug Conway, Mesa Community College
 John Eastwood, Northern Arizona University
 Price Fishback, University of Arizona
 Anne Williams, Gateway Community College

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. Jougantatos, California State University–
 Sacramento
 Jonathan Kaplan, 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
 Kristen Monaco, California State University–Long Beach
 W. Douglas Morgan, University of California, Santa
 Barbara
 Nivedita Mukherji, Oakland University
 Solomon Namala, Cerritos College
 Andrew Narwold, University of San Diego
 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
 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 Yamarik, California State University–Long Beach
 Guy Yamashiro, California State University–Long Beach
 Kevin 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 Jablonowski, University of Hartford
 Donn M. Johnson, Quinnipiac University
 Robert Martel, University of Connecticut
 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
 Eric P. Chiang, Florida Atlantic University
 Martine Duchatelet, Barry University
 Hadley Hartman, Santa Fe Community College
 Richard Hawkins, University of West Florida
 Brad Kamp, 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 Wiggernhorn, 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 Reksulak, 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
 Helen Roberts, University of Illinois–Chicago
 Thomas R. Sadler, Western Illinois University
 Eric Schulz, Northwestern University
 Dennis Shannon, Southwestern Illinois College

Charles Sicotte, 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
 Thomas Gresik, University of Notre Dame
 Robert B. Harris, Indiana University–Purdue University
 Indianapolis
 Fred Herschede, Indiana University–South Bend
 Abraham Mathew, Indiana University–Purdue University
 Indianapolis
 John Pomery, 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 Einolf, 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
 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, Mississippi State University
 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
 Terrel 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
 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
 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-Andreopoulos, 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
 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
 Shahriar 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 Char-
 lotte
 Robert Whaples, Wake Forest University
 John Whitehead, Appalachian State University
 Gary W. Zinn, East Carolina University
 Rick Zuber, University of North Carolina at Charlotte

OHIO

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
 Leroy Gill, Ohio State University
 Steven Heubeck, Ohio State University
 Daniel Horton, Cleveland State University
 Kristen Keith, University of Toledo
 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 Palardy, Youngstown State University
 Charles Reichheld, Cuyahoga Community College
 Teresa 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
 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
 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 Raihall, West Chester University
 Adam Renhoff, Drexel University
 Nicole Sadowski, York College of Pennsylvania
 Edward Scahill, 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
 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 Escobari, Texas A&M University
 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
 Ansul 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
Arden Pope, Brigham Young University

VERMONT

Nancy Brooks, University of Vermont

VIRGINIA

Lee Badgett, Virginia Military Institute
Lee A. Coppock, University of Virginia
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
Araine 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
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

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
Michael Bradley, George Washington University
Colleen M. Callahan, American University
Robert Feinberg, American University
Walter Park, 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. Executive Editor David Alexander's energy and support were indispensable. David helped mold the presentation and provided words of encouragement whenever our energy flagged. Executive Development 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. Lindsey Sloan managed all aspects of the media resources and helped keep both them and the print book on schedule. Carla Thompson managed the entire production process, and Sarah Dumouchelle managed the extensive supplement package that accompanies the book. Carla Thompson and Jonathan Boylan turned our manuscript pages into a beautiful published book. Editorial Assistant Michelle Zeng assisted the team in completing several tasks to help produce both the media resources and the book. We received excellent research assistance on this and previous editions from Dante DeAntonio, Ed Timmons, Matthew Saboe, David Van Der Goes, and Jason Hockenberry. We thank Elisa Adams, Pam Smith, Elena Zeller, Jennifer Brailsford, Lindsay K. Clark, Debroah Crowell, Ellen Vandevort Wolf, and Cindy O'Brien 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 sixth 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 a project of this magnitude is borne by our families. We appreciate the patience, support, and encouragement of our wives and children.

CHAPTER 1

Economics: Foundations and Models

Chapter Outline and Learning Objectives

- 1.1 Three Key Economic Ideas**, page 4
Explain these three key economic ideas: People are rational; people respond to economic incentives; and optimal decisions are made at the margin.
- 1.2 The Economic Problem That Every Society Must Solve**, page 8
Discuss how an economy answers these questions: What goods and services will be produced? How will the goods and services be produced? Who will receive the goods and services produced?
- 1.3 Economic Models**, page 12
Describe the role of models in economic analysis.
- 1.4 Microeconomics and Macroeconomics**, page 17
Distinguish between microeconomics and macroeconomics.
- 1.5 A Preview of Important Economic Terms**, page 17
Define important economic terms.
- Appendix: Using Graphs and Formulas**, page 27
Use graphs and formulas to analyze economic situations.



Will Smart Devices Revolutionize Health Care?

If you get sick, your doctor may send you to a hospital or clinic for a series of tests. You'll need to schedule an appointment, travel to the clinic, and spend time in a waiting room. Depending on your medical insurance, you'll also need to pay for the tests. But what if you had an inexpensive smart device that would allow you to test yourself at home and send the results to your doctor? Walter De Brouwer is a Belgian-born entrepreneur who worked in various industries, including telecommunications and publishing. When his son was badly injured in a fall, De Brouwer was inspired to create such a smart device. His California-based firm, Scanadu, developed the Scout, a small disk that when pressed against the side of your head can record your blood pressure, heart rate, and temperature. According to the firm's advertising, the Scout allows you to "Check your health as easily as your e-mail." Some people have compared the Scout to the Tricorder medical device from the *Star Trek* TV series.

Scanadu is not alone in developing new consumer medical devices. The Apple Watch monitors your heart rate, as well as how much exercise you've performed and how many calories you've burned; OraSure sells a home HIV test; and Alivecor sells a device that can be attached to a smartphone and allows people with heart problems to perform their own electrocardiograms.

These firms are reacting to several trends: Many people have become more

health conscious; as the population ages, more people are experiencing medical problems; and technological progress has made it possible for small electronic devices, including smartwatches and smartphones, to monitor blood pressure and perform other tasks. These firms are responding to changing *economic incentives*. As we will see, the *market system* provides firms with the incentive and the resources to both create new goods and services and improve existing goods and services. The result is an ever-increasing standard of living for the average person.

Over time, as technology, consumer demand, and government policies change, the market system enables the flow of resources out of some industries and into others. For instance, in the United States resources have been flowing out of the production of manufactured goods such as steel, shoes, and furniture and into the production of services, including medical services. In fact, health care has been the most rapidly expanding sector of the U.S. economy.

AN INSIDE LOOK on **page 20** explores how Google is adding to its growing list of technological innovations by developing smart contact lenses to help patients manage diabetes.

Sources: Timothy Hay, "Gadgets Bring Diagnostics into the Home," *Wall Street Journal*, April 27, 2015; Jacopo Prisco, "Scanadu: The Medical Tricorder from *Star Trek* Is Here," *cnn.com*, February 11, 2015; and Peter Andrey Smith, "Zombies, Workout Music and Baby Trackers: Health Tech for Everyone," *New York Times*, March 10, 2014.

Economics in Your Life

Will There Be Plenty of Jobs Available in the Health Care Industry?

The U.S. Health Resources and Services Administration (HRSA) forecasts that there will be 866,400 doctors in the United States in 2020. The HRSA also forecasts that by 2020 the country will need 922,000 doctors. In other words, this federal government agency forecasts that there will be a *shortage* of about 55,600 doctors in 2020. The U.S. Bureau of Labor Statistics forecasts that 13 of the 20 fastest-growing occupations over the next 10 years will be in the medical field. But the availability of these jobs depends on the reliability of the forecasts. What is the basis for these forecasts and how reliable are they? As you read this chapter, try to answer this question. You can check your answer against the one we provide on **page 19** at the end of this chapter.

In this book, we use economics to answer questions such as the following:

- What determines the prices of smartwatches?
- Why have health care costs risen so rapidly?
- Why do firms engage in international trade, and how do government policies affect international trade?
- Why does the government control the prices of some goods and services, and what are the effects of those controls?

Economists do not always agree on the answers to every question, and there are lively debates on some issues. Because new problems and issues are constantly arising, economists are always developing new methods to analyze economic questions.

All the topics we discuss in this book illustrate a basic fact of life: To attain our goals, we must make choices. We must make choices because we live in a world of **scarcity**, which means that although our wants are *unlimited*, the resources available to fulfill those wants are *limited*. You might want to own a BMW and spend each summer vacationing at five-star European hotels, but unless Bill Gates is a close and generous relative, you probably lack the funds to fulfill these wants. Every day, you make choices as you spend your limited income on the many goods and services available. The finite amount of time you have also limits your ability to attain your goals. If you spend an hour studying for your economics midterm, you have one hour less to study for your history midterm. Firms and the government are in the same situation as you: They must also attain their goals with limited resources. **Economics** is the study of the choices consumers, business managers, and government officials make to attain their goals, given their scarce resources.

We begin this chapter by discussing three important economic ideas that we will return to many times in the following chapters: *People are rational*, *people respond to economic incentives*, and *optimal decisions are made at the margin*. Then, we consider the three fundamental questions that any economy must answer: *What goods and services will be produced?* *How will the goods and services be produced?* and *Who will receive the goods and services produced?* Next, we consider the role of *economic models* in analyzing economic issues. **Economic models** are simplified versions of reality used to analyze real-world economic situations. We will explore why economists use models and how they construct them. Finally, we will discuss the difference between microeconomics and macroeconomics, and we will preview some important economic terms.

Scarcity A situation in which unlimited wants exceed the limited resources available to fulfill those wants.

Economics The study of the choices people make to attain their goals, given their scarce resources.

Economic model A simplified version of reality used to analyze real-world economic situations.

Market A group of buyers and sellers of a good or service and the institution or arrangement by which they come together to trade.

1.1 Three Key Economic Ideas

LEARNING OBJECTIVE: Explain these three key economic ideas: People are rational; people respond to economic incentives; and optimal decisions are made at the margin.

Whether your goal is to buy a smartwatch or find a part-time job, you will interact with other people in *markets*. A **market** is a group of buyers and sellers of a good or service and the institution or arrangement by which they come together to trade. Examples of markets are the markets for smartwatches, houses, haircuts, stocks and bonds, and labor. Most of economics involves analyzing how people make choices and interact in markets. Here are the three important ideas about markets that we'll return to frequently:

1. People are rational.
2. People respond to economic incentives.
3. Optimal decisions are made at the margin.

People Are Rational

Economists generally assume that people are rational. This assumption does *not* mean that economists believe everyone knows everything or always makes the “best” decision. It means that economists assume that consumers and firms use all available information as they act to achieve their goals. Rational individuals weigh the benefits and costs of each action, and they choose an action only if the benefits outweigh the costs. For example, if Apple charges a price of \$349 for the basic model of its smartwatch, economists assume that the managers at Apple have estimated that this price will earn the company the most profit. Even though the managers may be wrong—maybe a price of \$325 or \$375 would be more profitable—economists assume that the managers at Apple have acted rationally, on the basis of the information available to them, in choosing the price of \$349. Although not everyone behaves rationally all the time, the assumption of rational behavior is very useful in explaining most of the choices that people make.

MyEconLab Concept Check

People Respond to Economic Incentives

Human beings act from a variety of motives, including envy, compassion, and religious belief. While not ignoring other motives, economists emphasize that consumers and firms consistently respond to *economic incentives*. This point may seem obvious, but it is often overlooked. For example, according to an article in the *Wall Street Journal*, the FBI couldn’t understand why banks were not taking steps to improve security in the face of an increase in robberies: “FBI officials suggest that banks place uniformed, armed guards outside their doors and install bullet-resistant plastic, known as a ‘bandit barrier,’ in front of teller windows.” FBI officials were surprised that few banks took their advice. But the article also reported that installing bullet-resistant plastic costs \$10,000 to \$20,000, and a well-trained security guard receives \$50,000 per year in salary and benefits. The average loss in a bank robbery is only about \$1,200. The economic incentive to banks is clear: It is less costly to put up with bank robberies than to take additional security measures. FBI agents may be surprised by how banks respond to the threat of robberies—but economists are not.

In each chapter, the *Making the Connection* feature discusses a news story or another application related to the chapter material. Read this *Making the Connection* for a discussion of whether people respond to economic incentives even when deciding how much to eat and how much to exercise.

MyEconLab Concept Check

**Making
the
Connection**
MyEconLab Video

Does Health Insurance Give People an Incentive to Become Obese?

Obesity is a significant health problem in the United States. Body mass index (BMI) is a measurement of a person’s weight relative to the person’s height. The U.S. Centers for Disease Control and Prevention (CDC) defines *obesity* for an adult as having a body mass index (BMI) of 30 or greater. For example, a 5'4" adult with a BMI of 30 is 30 pounds overweight. Obesity is a factor in a variety of diseases, including heart disease, stroke, diabetes, and hypertension.

The two maps on the next page show the dramatic increase in obesity between 1994 and 2013. In 1994, in a majority of states, only between 10 percent and 14 percent of the adult population was obese, and in no state was more than 20 percent of the adult population obese. By 2013, in every state, at least 20 percent of the adult population was obese, and in 43 states, at least 25 percent of the adult population was obese.

Many people who suffer from obesity have underlying medical conditions. For these people, obesity is a medical problem that they cannot control. The fact that obesity has increased, though, indicates that for some people obesity is the result of