

Contents

Preface

vii

Part 1: Introduction

Chapter 1 Economics: Foundations and Models	1
Appendix: Using Graphs and Formulas	13
Chapter 2 Trade-offs, Comparative Advantage, and the Market System	23
Chapter 3 Where Prices Come From: The Interaction of Demand and Supply	43
Chapter 4 Economic Efficiency, Government Price Setting, and Taxes	69
Appendix: Quantitative Demand and Supply Analysis	78

Part 2: Markets in Action

Chapter 5 Externalities, Environmental Policy, and Public Goods	97
Chapter 6 Elasticity: The Responsiveness of Demand and Supply	119

Part 3: Firms in the Domestic and International Economies

Chapter 7 Firms, the Stock Market, and Corporate Governance	145
Appendix: Tools to Analyze Firms' Financial Information	158
Chapter 8 Comparative Advantage and the Gains from International Trade	171
Appendix: Multinational Firms	184

Part 4: Microeconomic Foundations: Consumers and Firms

Chapter 9 Consumer Choice and Behavioral Economics	195
Appendix: Using Indifference Curves and Budget Lines to Understand Consumer Behavior	206
Chapter 10 Technology, Production, and Costs	221
Appendix: Using Isoquants and Isocosts to Understand Production and Cost	235

Part 5: Market Structure and Firm Strategy

Chapter 11 Firms in Perfectly Competitive Markets	253
Chapter 12 Monopolistic Competition: The Competitive Model in a More Realistic Setting	279
Chapter 13 Oligopoly: Firms in Less Competitive Markets	301
Chapter 14 Monopoly and Antitrust Policy	325
Chapter 15 Pricing Strategy	347

Part 6: Markets for Factors of Production

Chapter 16 The Markets for Labor and Other Factors of Production	361
--	-----

Part 7: Information, Taxes, and the Distribution of Income

Chapter 17 The Economics of Information	393
Chapter 18 Public Choice, Taxes, and the Distribution of Income	407

Part 8: Macroeconomic Foundations and Long-Run Growth

Chapter 19 GDP: Measuring Total Production and Income	431
Chapter 20 Unemployment and Inflation	447
Chapter 21 Economic Growth, the Financial System, and Business Cycles	471
Chapter 22 Long-Run Economic Growth: Sources and Policies	487

Part 9: Short-Run Fluctuations

Chapter 23 Aggregate Expenditure and Output in the Short Run	507
Appendix: The Algebra of Macroeconomic Equilibrium	519
Chapter 24 Aggregate Demand and Aggregate Supply Analysis	531
Appendix: Macroeconomic Schools of Thought	543

Part 10: Monetary and Fiscal Policy

Chapter 25 Money, Banks, and the Federal Reserve System	553
Chapter 26 Monetary Policy	575
Chapter 27 Fiscal Policy	605
Appendix: A Closer Look at the Multiplier	622
Chapter 28 Inflation, Unemployment, and Federal Reserve Policy	635

Part 11: The International Economy

Chapter 29 Macroeconomics in an Open Economy	655
Chapter 30 The International Financial System	677
Appendix: The Gold Standard and the Bretton Woods System	685

Preface

Features of this Instructor's Manual

Each chapter of this *Instructor's Manual* contains the following elements:

Chapter Summary

An overview of the main economic concepts covered.

Learning Objectives

A list of the student learning goals listed at the beginning of each text chapter.

Chapter Outline with Teaching Tips

Detailed descriptions of the economic concepts in the book, key term definitions, and teaching tip boxes. The teaching tip boxes include recommendations on how to integrate key figures and tables as well as special features such as the *An Inside Look* newspaper feature, *Economics in YOUR LIFE!*, *Making the Connection*, *Solved Problems*, and *Don't Let This Happen to YOU!*

Extra Solved Problems

Each chapter of the main text has a *Solved Problem* to support two of the chapter's learning objectives. This *Instructor's Manual* includes *Solved Problems* for the remaining learning objectives. You can assign these extra *Solved Problems* as homework or present them during classroom lectures.

Extra Economics in YOUR LIFE!

Each chapter of the book opens and closes with a special feature entitled *Economics in YOUR LIFE!* that emphasizes the connection between the material and the students' personal experiences and questions. This *Instructor's Manual* includes an extra *Economics in YOUR LIFE!* for each chapter to present in class.

Extra Making the Connection

Each chapter of the main text has two or more *Making the Connection* features to provide real-world reinforcement of key concepts. This *Instructor's Manual* includes extra *Making the Connections* to present in class.

Solutions to Review Questions and Problems and Applications

Each chapter of this *Instructor's Manual* includes solutions to all questions and problems in the main text:

- Solutions to the two *Thinking Critically* questions that accompany the *An Inside Look* newspaper feature located at the end of each chapter
- Solutions to the end-of-chapter Review Questions
- Solutions to the end-of-chapter Problems and Applications

Revisions to the Main Text

If you used Hubbard/O'Brien, *ECONOMICS*, SECOND EDITION, here is a summary of the changes the authors made to the main text. Knowing about these changes will help you revise your current teaching notes and class presentations.

The effects of the severe economic downturn that began in 2007 with the bursting of the housing bubble continued through 2009. Unemployment rose to levels that had not been seen in decades, and the crisis in the financial system was the worst since the Great Depression of the 1930s. Policy debates intensified during 2009, as Congress passed and President Barack Obama enacted the Recovery and Reinvestment Act, the largest package of spending increases and tax cuts in history. The Federal Reserve sailed into uncharted waters as it developed new policy tools to deal with the unprecedented financial turmoil. Other long-running policy debates continued as well, as reform of the health care system, the looming cost increases of Social Security and Medicare, environmental policy, and changes to the tax system all received attention from economists, policymakers, and the public. In the fourth edition, we help students understand these recent economic events and the policy responses to them. As in the first and second editions, we place applications at the forefront of the discussion because we believe that students find the study of economics more interesting and easier to master when they see economic analysis applied to the real-world issues that concern them.

In this new edition, we have taken the opportunity to make many changes throughout the text, concentrating on the following key areas:

Policy debates, including immigration, health care, and pollution. The number of jobs requiring technical education and training continues to increase. In Chapter 1, “Economics: Foundations and Models,” we use the debate about restricting H-1B worker visas to introduce students to positive and normative economic analysis. In Chapter 8, “Comparative Advantage and the Gains from International Trade,” we explore the “Buy American” provision in the 2009 stimulus package. As this book goes to press, Congress is debating a bill to overhaul the health care system. In Chapter 2, “Trade-offs, Comparative Advantage, and the Market System,” we discuss the trade-offs involved in health care spending and the Medicare and Medicaid programs. We revisit the topic of health care in Chapter 5, “Externalities, Environmental Policy, and Public Goods,” where we discuss projections of health care spending and the role of the U.S. government in the health care system. In Chapter 16, “The Markets for Labor and Other Factors of Production,” we discuss whether U.S. firms are handicapped in competing with foreign firms by paying for their employees’ health insurance. We return to the health care topic in Chapter 18, “Public Choice, Taxes, and the Distribution of Income,” with a news article and analysis on a proposed soda tax to pay for health care. The United States has made progress in reducing air pollution since Congress passed the Clean Air Act in 1970. In Chapter 5, “Externalities, Environmental Policy, and Public Goods,” we use the economic concepts of marginal cost, marginal benefit, and efficiency to discuss environmental policy, including President Barack Obama’s proposed cap-and-trade policy to reduce emissions of carbon dioxide.

The recession and financial crisis of 2007–2009. Today’s students feel the effects of the worst economic crisis since the Great Depression of the 1930s. The problems in the financial system have proven that it is important for students in both microeconomics and macroeconomics courses to understand the basics of how financial markets work and the role of government in financial regulation. In Chapter 7, “Firms, the Stock Market, and Corporate Governance,” we cover the basics of the stock and bond markets, discuss why stock prices fluctuate, and examine the role of the principal-agent problem in the financial meltdown of 2007–2009. We return to the financial crisis in Chapter 17, “The Economics of Information,” where we use Bernie Madoff’s “Ponzi” scheme to illustrate moral hazard. Chapter 24, “Aggregate Demand and Aggregate Supply Analysis,” covers the origins of the recession and includes a new discussion of how long it takes the economy to return to potential GDP. The housing bust and subprime crisis are discussed in Chapter 25, “Money, Banks, and the Federal Reserve System,” and Chapter 26, “Monetary Policy.”

New initiatives by the Federal Reserve. During 2008, the Fed dramatically broke with precedent by setting up a number of new “lending facilities” and by participating in actions such as the purchase of Bear Stearns by JP Morgan Chase. In this new edition, we provide students with a basic background on investment banks, the process of securitization—including a new explanatory figure—and the mortgage-

backed securities market—including the roles of Fannie Mae and Freddie Mac—and the debate among economists concerning the Fed’s new policies. Chapter 25 contains an important new section on the rise of the “shadow banking” system and a new supporting figure, Figure 25-4, to explain securitization.

Real-world company examples and newspaper articles. As in previous editions, we open each chapter by highlighting a company to establish a real-world context for learning and to spark students’ interest in economics. We have chosen new companies for some chapters and updated the information in the other chapters. As in previous editions, each chapter closes with the *An Inside Look* feature, which shows students how to apply the concepts from the chapter to the analysis of a news article. We have replaced all the *An Inside Look* features in this edition. Here is a snapshot of some of these changes: Chapter 3, “Where Prices Come From: The Interaction of Demand and Supply,” opens with a discussion of Red Bull and the market for energy drinks. The *An Inside Look* feature presents an article and analysis of how advertising helps Red Bull increase the demand for its energy drink. Chapter 7, “Firms, the Stock Market, and Corporate Governance,” opens with a discussion of the runaway success of the private company Facebook. The *An Inside Look* feature presents an article and analysis about Facebook and profits. Chapter 9, “Consumer Choice and Behavioral Economics,” opens with a discussion of how Oprah Winfrey’s endorsement of the Kindle e-reader caused a dramatic increase in demand for the product. The *An Inside Look* feature presents an article and analysis on the power of Oprah Winfrey’s endorsements. Chapter 19, “GDP: Measuring Total Production and Income,” opens with a discussion of Ford Motor Company’s performance during the 2007–2009 recession. The *An Inside Look* feature presents an article and analysis of the effects of falling auto sales on the U.S. economy. Chapter 26, “Monetary Policy,” opens with a discussion of homebuilder Toll Brothers. The *An Inside Look* feature presents an article and analysis of the effect of the trouble in the housing market on the U.S. and European economies.

Here is a list of additional changes to this third edition:

Chapter 1 includes a new *Making the Connection*, “Should the Federal Government Have Increased Restrictions on the Immigration of Skilled Workers?”

Chapter 2 includes a new *Making the Connection*, “Facing the Trade-offs in Health Care Spending.”

Chapter 3 includes three new *Making the Connection* features: “Is the Big Mac an Inferior Good?” “The Aging of the Baby Boom Generation,” and “Red Bull and the Future Demand for Energy Drinks.”

Chapter 4 includes a new *Making the Connection*, “The Consumer Surplus from Broadband Internet Service.”

Chapter 5 includes revised graphs of the economic effects of government taxes and subsidies to improve student understanding of this sometimes difficult subject, and a new *Making the Connection*, “Should the Government Run the Health Care System?”

Chapter 6 includes a new section and table on “Some Estimated Price Elasticities of Demand.”

Chapter 7 includes a new section and figure on “Why Do Stock Prices Fluctuate So Much?” and a new *Making the Connection*, “How Important Are Small Businesses to the U.S. Economy?”

Chapter 8 includes two new *Making the Connection* features, “How Caterpillar Depends on International Trade” and “The Obama Administration Develops a Trade Policy.”

Chapter 9 includes two new *Making the Connection* features, “Are There Any Upward-Sloping Demand Curves in the Real World?” and “A Blogger Who Understands the Importance of Sunk Costs.”

Chapter 11 includes several cost and revenue graphs that have been redrawn for increased clarity, as well as a new *Making the Connection*, “Easy Entry Makes the Long Run Pretty Short in the Apple iPhone Apps Store.”

Chapter 12 includes a new *Making the Connection*, “The Rise and Decline of Starbucks.”

Chapter 13 includes a new *Making the Connection*, “Can We Predict Which Firms Will Continue to Be Successful?”

Chapter 14 includes a new *Making the Connection*, “Have Google and Microsoft Violated Antitrust Laws?”

Chapter 16 contains a new *Making the Connection*, “Are U.S. Firms Handicapped by Paying Their Employees’ Health Insurance?”

Chapter 17 includes a new *Making the Connection*, “Moral Hazard, Big Time: Bernie Madoff’s ‘Ponzi’ Scheme.”

Chapter 19 includes a new *Making the Connection* on the decline in consumption spending and increase in saving during the recession.

Chapter 20 includes a new *Making the Connection* on the surprising increase in male unemployment relative to female unemployment during the recession.

Chapter 21 includes a new *Making the Connection* on firms that decide to expand even as their sales fall during a recession.

Chapter 23 includes a new section on the “paradox of thrift.”

Chapter 27 includes a new *Making the Connection* on the debate over the size of the government spending multiplier. In discussing the tax cuts in the stimulus program, we include a new section on the different effects temporary and permanent tax changes have on consumption spending.

Chapter 30 includes a new *Making the Connection* on the debate over whether the euro helped or hurt Europe in dealing with the recession.

- Many instructors have found our dynamic aggregate demand and aggregate supply model to be an important improvement on the usual static model. We understand, however, that some instructors would prefer to concentrate on the basic model. So, in the third edition, our discussion of the dynamic model appears in one entirely self-contained section in each of Chapters 24, 26, and 27. These sections can be omitted with no loss of continuity because knowledge of the dynamic model is not presumed in any of the discussion outside of these sections.
- Figures and tables have been updated using the latest data available.
- Approximately 30 percent of the end-of-chapter problems have been either replaced or updated.

Organizing Your Syllabus

The *Instructor’s Manual* can be a valuable resource for both experienced and first-time instructors. Both the textbook and *Instructor’s Manual* provide comprehensive coverage of economic theory, monetary policy, fiscal policy, and real-world applications.

Microeconomic Chapters

The microeconomics chapters cover relatively new developments in the field, such as behavioral and personnel economics (Chapter 16) and the economics of information (Chapter 17). The authors include business applications in each chapter and have a dedicated chapter on firms, the stock market, and corporate governance (Chapter 7). The comprehensive coverage of microeconomics and business topics allows instructors to select chapters for diverse groups of students.

Most instructors will not want to cover indifference curve analysis or isoquant and isocost curves, but those who wish to will find these topics covered in the appendices to Chapter 9, “Consumer Choice and Behavioral Economics,” and Chapter 10, “Production, Technology, and Costs,” respectively. Chapter 13 of this instructor’s manual, “Oligopoly: Firms in Less Competitive Markets,” includes coverage of the kinked demand curve that *does not* appear in the main book.

First-time users of the textbook should be aware that some topics introduced in one chapter are applied in a later chapter. Chapter 4, “Economic Efficiency, Government Price Setting, and Taxes,” introduces consumer, producer and economic surplus to describe the impact of government-imposed price controls. The appendix to chapter 4, “Quantitative Demand and Supply Analysis,” explains in detail how consumer and producer surplus are calculated using linear demand and supply curves. Chapter 8, “Comparative Advantage and the Gains from International Trade,” uses the same tools to measure the impact of tariffs and quotas on international trade.

Macroeconomic Chapters

Chapter 19, “GDP: Measuring Total Production and Income,” and Chapter 8, “Unemployment and Inflation” carefully provide definitions of macroeconomic statistics such as GDP, CPI, and payroll employment, that dominate news headlines.

The comprehensive coverage of macroeconomic models and policy issues allows instructors with somewhat different course objectives the flexibility to choose different chapter sequences. The authors provide an overview of issues of long-run growth, business cycles, and the financial system in Chapter 21, “Economic Growth, the Financial System, and Business Cycles.” Instructors who wish to explore more deeply the sources of long-run growth and government policies towards growth can also assign Chapter 22, “Long-Run Economic Growth: Sources and Policies.” Monetary policy has a central role in the economy, so the book includes two chapters on monetary policy: Chapter 26, “Monetary Policy,” and Chapter 28, “Inflation, Unemployment, and Federal Reserve Policy.” Chapter 28 discusses the role of the Fed and inflation targeting with an insider’s perspective.

Chapter 23, “Aggregate Expenditure and Output in the Short Run,” contains a thorough discussion of the traditional Keynesian 45°-line aggregate expenditure model. Many instructors find this model useful in introducing students to the short-run relationship between spending and production. However, instructors may also safely omit Chapter 23 and proceed directly to Chapter 24, “Aggregate Demand and Aggregate Supply Analysis.”

Chapter 24 carefully develops the *AD-AS* model and then makes the model dynamic in an **optional section** to account better for actual movements in real GDP and the price level. Chapter 24 includes a three-layer, full-color acetate for the key introductory dynamic *AD-AS* graph (Figure 24-8, “A Dynamic Aggregate Demand and Aggregate Supply Model” on page 806.) We created this acetate to help students see how the graph builds step by step and to help make the graph easier for instructors to present. The acetate will help instructors who want to use dynamic *AD-AS* in class but believe the model needs to be developed carefully. Instructors may safely omit the sections on the dynamic *AD-AS* model in Chapter 26, “Monetary” and in Chapter 27, “Fiscal Policy,” without any loss in continuity to the discussion of macroeconomic theory and policy.

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

CORE	POLICY	OPTIONAL
<p>Chapter 1: Economics: Foundations and Models <i>Uses the immigration debate to discuss the role of models in economic analysis.</i></p> <p>Chapter 2: Trade-offs, Comparative Advantage, and the Market System <i>Includes coverage of the role of the entrepreneur, property rights, and the legal system in a successful market system.</i></p> <p>Chapter 3: Where Prices Come From: The Interaction of Demand and Supply</p> <p>Chapter 6: Elasticity: The Responsiveness of Demand and Supply</p> <p>Chapter 8: Comparative Advantage and the Gains from International Trade <i>May be delayed until after Chapter 16.</i></p> <p>Chapter 10: Technology, Production, and Costs</p> <p>Chapter 11: Firms in Perfectly Competitive Markets</p> <p>Chapter 12: Monopolistic Competition: The Competitive Model in a More Realistic Setting</p> <p>Chapter 13: Oligopoly: Firms in Less Competitive Markets <i>Full coverage of game theory and unique coverage of Porter's Five Forces Model of Competition.</i></p> <p>Chapter 14: Monopoly and Antitrust Policy <i>May be covered after chapter 11.</i></p> <p>Chapter 16: The Markets for Labor and Other Factors of Production <i>Covers all factors of production in one chapter and includes coverage of discrimination, unions, compensating differentials, and personnel economics.</i></p>	<p>Chapter 4: Economic Efficiency, Government Price Setting, and Taxes</p> <p>Chapter 5: Externalities, Environmental Policy, and Public Goods <i>This chapter may be delayed until after Chapter 14.</i></p> <p>Chapter 18: Public Choice, Taxes, and the Distribution of Income</p> <p>Chapter 26: Monetary Policy <i>Uses the aggregate demand and aggregate supply model to show the effects of monetary policy on real GDP and the price level. Chapter 26 is a self-contained discussion, so instructors may safely omit the material in Chapter 28.</i></p> <p>Chapter 27: Fiscal Policy <i>Uses the aggregate demand and aggregate supply model to show how taxes and government spending affect the economy. Includes significant coverage of the supply-side effects of fiscal policy.</i></p>	<p>Chapter 1 Appendix: Using Graphs and Formulas</p> <p>Chapter 4 Appendix: Quantitative Demand and Supply Analysis <i>Provides a quantitative analysis of rent control.</i></p> <p>Chapter 7: Firms, the Stock Market, and Corporate Governance <i>Unique chapter.</i></p> <p>Chapter 7 Appendix: Tools to Analyze Firms' Financial Information <i>Covers present value and financial statements.</i></p> <p>Chapter 8 Appendix: Multinational Firms <i>Covers the benefits and challenges of operating overseas businesses.</i></p> <p>Chapter 9: Consumer Behavior and Behavioral Economics <i>Covers utility theory and unique coverage of social influences on behavior and network externalities.</i></p> <p>Chapter 9 Appendix: Using Indifference Curves and Budget Lines to Understand Consumer Behavior <i>Complete and intuitive coverage for those instructors who prefer to cover indifference curves rather than utility theory.</i></p> <p>Chapter 10 Appendix: Using Isoquants and Isocosts to Understand Production and Cost <i>Provides a formal analysis of how firms choose the combination of inputs to produce a given level of output.</i></p> <p>Chapter 15: Pricing Strategy <i>Unique chapter that covers price discrimination, cost-plus pricing, and two-part tariffs.</i></p>

CORE	POLICY	OPTIONAL
<p>Chapter 17: The Economics of Information <i>Covers asymmetric information and moral hazard.</i></p> <p>Chapter 19: GDP: Measuring Total Production and Income <i>Covers how total production is measured and the difference between real and nominal variables.</i></p> <p>Chapter 20: Unemployment and Inflation <i>Covers the three types of unemployment, how inflation is measured, and the difference between real and nominal interest rates.</i></p> <p>Chapter 21: Economic Growth, the Financial System, and Business Cycles <i>Provides an overview of key macroeconomic issues by discussing the business cycle in the context of long-run growth. Discusses the roles of entrepreneurship, financial institutions, and policy in economic growth.</i></p> <p>Chapter 22: Long-Run Economic Growth: Sources and Policies <i>Highlights the importance of institutions, policies, and technological change for economic growth.</i></p> <p>Chapter 24: Aggregate Demand and Aggregate Supply Analysis <i>This chapter carefully develops the AD-AS model and then makes the model dynamic to better account for actual movements in real GDP and the price level. The dynamic AD-AS model is covered in an optional section, which instructors can omit without loss of continuity.</i></p> <p>Chapter 25: Money, Banks, and the Federal Reserve System <i>Explores the role of money in the economy, the money supply process, and the structure of the Federal Reserve.</i></p>		<p>Chapter 23: Output and Expenditure in the Short Run <i>Uses the Keynesian 45°-line aggregate expenditure model to introduce students to the short-run relationship between spending and production. The discussion of monetary and fiscal policy in later Chapters uses only the aggregate demand and aggregate supply model, which allows instructors to omit Chapter 23.</i></p> <p>Chapter 23 Appendix: The Algebra of Macroeconomic Equilibrium <i>Uses equations to represent the aggregate expenditure model described in the Chapter.</i></p> <p>Chapter 24 Appendix: Macroeconomic Schools of Thought <i>Covers the monetarist model, the new classical model, and the real business cycle model.</i></p> <p>Chapter 28: Inflation, Unemployment, and Federal Reserve Policy <i>Discusses the short-run and long-run Phillips curves. Also covers the roles of expectations formation and central bank credibility in monetary policy.</i></p> <p>Chapter 29: Macroeconomics in an Open Economy <i>Explains the linkages among countries at the macroeconomic level and how policymakers in all countries take these linkages into account when conducting monetary and fiscal policy.</i></p> <p>Chapter 30: The International Financial System <i>Covers the international financial system and explores the role central banks play in the system.</i></p>

MyEconLab for Instructors & Students



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

MyEconLab For the Professor

Instructors can choose how much or how little time to spend setting up and using MyEconLab. Each chapter contains two preloaded homework 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, learning objective summaries, and step-by-step guided solutions, where appropriate. Student use of these materials requires no initial instructor setup. The online gradebook records each student's performance and time spent on the tests and study plan and generates reports by student or by 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 homework exercise sets for each chapter that include the student tutorial resources mentioned above
- Preloaded quizzes for each chapter that are unique to the text and not repeated in the study plan or homework exercise sets
- Study plan problems that are similar to the end-of-chapter problems and numbered exactly like the book to make assigning homework easier
- *Economics in the News* articles that are updated weekly with appropriate exercises
- ABC News clips, which explore current economic applications and policy issues, along with exercises
- Test Item File questions that allow you to assign quizzes or homework that will look just like your exams
- Econ Exercise Builder, which allows you to build your own customized exercises

4.3 Government Intervention in the Market

End of Chapter 3.7
0 correct | 0 of 27 complete

Problem 3.7. Suppose that the government sets a price floor for milk that is above the competitive equilibrium price.

1) In the figure to the right, identify the quantity that is sold with the price floor using the point drawing tool. Attach the provided label.

2) Compare the economic surplus in this market when there is no price floor and when there is a price floor. Do this by shading the change in economic surplus as a result of the price floor using the triangle drawing tool. Attach the appropriate label (new economic surplus, deadweight loss).

If you are not sure of the correct answer, click on the question mark icon.

Sorry, that's not correct.

Consumers are willing to purchase a quantity indicated where the price floor intersects the demand curve. This quantity is less than the equilibrium amount.

Done

Click a line or point to select it.

All parts showing

Clear All Check Answer Close

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, even problems with graphs. When working homework exercises, students receive immediate feedback, with links to additional learning tools.

Customization and Communication

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

MyEconLab: Moving to a New Edition

When a new edition of your textbook publishes, you do not have to re-create all your assignments. You can import assignments from a previous edition of the same book.

Not every exercise from the previous edition is included in the new edition. Once your assignments have been imported, a list of any exercises that did not convert will be displayed as well as emailed to you. Please use this list to help you find suitable replacement exercises in the new edition. You must first allow assignments from old edition to be imported.

In the old edition course:

1. Click on **Homework Manager**
2. Click **Show All** to see all assignments (HW, Quizzes, Tests)
3. Choose **Change Assignment Settings** from Drop down menu

Coord: Template Principles of Microeconomics [0] > HOMEWORK/TEST MANAGER

Manage Course List

Homework/Test Manager [Member List](#)

Create Assignment Change Dates & Assign Status Set Prerequisites More Assignment Tools

Show All Homework Quizzes & Tests Other Chapters

2 3

Order	Ch.	Assignment Name		
1	1	Chapter 1 Homework	H	✓
2	1	Chapter 1 Quiz	Q	✓
3	2	Chapter 2 homework	H	✓
4	2	Chapter 2 Quiz	Q	✓
5	3	Chapter 3 Homework	H	✓
6	3	Chapter 3 Quiz	Q	✓

1

More Assignment Tools
Delete Assignments
Reorder Assignments
Change Categories
Change Assignment Settings
Manage Custom Questions

4. Check box for **Allow Import**
5. Click **Update**

Ch.	Assignment	Category	# of Results	Allow Import	Partial Credit
1	Chapter 1 Homework	H	191	✓	✓
2	Chapter 2 homework	H	182	✓	✓
3	Chapter 3 Homework	H	190	✓	✓
4	Chapter 4 homework	H	183	✓	✓
5	Chapter 5 homework	H	175	✓	✓
20	Chapter 20 homework	H	162	✓	✓
21	Chapter 21 Homework	H	169	✓	✓
33	Chapter 33 Homework	H	154	✓	✓
34	Chapter 34 Homework	H	145	✓	✓
22	Chapter 22 Homework	H	138	✓	✓
23	Chapter 23 Homework	H	156	✓	✓
24	Chapter 24 Homework	H	153	✓	✓
25	Chapter 25 Homework	H	158	✓	✓
26	Chapter 26 Homework	H	156	✓	✓
27	Chapter 27 Homework	H	155	✓	✓
29	Chapter 29 Homework	H	154	✓	✓

4

5

Cancel/Done Update

Import Assignments into New Edition Course

1. Create course based on **new edition** of the book.
2. Click on **Homework Manager**
3. Under **Create Assignment**, choose **Import/Copy Assignments from another course**

Miller 15e [0] > HOMEWORK/TEST MANAGER
Manage Course List

Homework/Test Manager: Homework

Create Assignment ▼ Change Dates & Assign Status Set Prerequisites More Assignment Tools ▼

Create Homework
Create Quiz
Create Test
Add Offline Item
Import/Copy Assignments from another course
Create Custom Question

			Category	Assigne
1	1	HW 1	H	

2

4. Choose **Convert and import assignments from courses using a previous edition of this book or related books with similar coverage**.
5. Click **Next**

Home : Help : Support : Browser Check : Log Out
James Sondgeroth 5/20/09 8:30 AM

Import Assignments Member List

1 Start 2 Select Import Options 3 Choose Course 4 Select Assignments

Import into Coord: Template Principles of Micro Miller 15e
Miller: Economics Today: The Micro View 15e

Choose an import option:

☒ Import assignments from other courses using this book.

☐ Convert and import assignments from courses using a previous edition of this book or related books with similar coverage.

Cancel Next

5

6. Choose if you wish to convert from **one your courses** or one from **another instructor** at your institution.
7. Click **Next**

The screenshot shows the 'myeconlab' interface. The top navigation bar includes links for Home, Help, Support, Browser Check, and Log Out, along with the user name 'James Sondgeroth' and the date/time '5/20/09 8:33 AM'. On the left, a sidebar contains buttons for 'My Courses', 'Student' (with sub-links: Course Home, Economic News, Quizzes & Tests, Study Plan, Homework, Results, Calendar, Textbook Resources, Student Center), and 'Hide Navigation Buttons'. The main content area is titled 'Import Assignments' with a 'Member List' link. It features a progress bar with four steps: 1 Start, 2 Select Import Options (current), 3 Choose Course, and 4 Select Assignments. Below the progress bar, the 'Import into' section lists 'Coord: Template Principles of Micro Miller 15e' and 'Miller: Economics Today: The Micro View 15e'. A message states: 'Choose from one of the following options for converting and importing assignments for this book. Only assignments marked as "Allow others to import" may be imported from other instructors.' Two radio button options are presented: 'Convert and import assignments from my courses.' (labeled with a large '6') and 'Convert and import assignments from other instructors at AUSTIN C C - PINNACLE.' (labeled with a large '7'). At the bottom, there are 'Cancel', 'Back', and 'Next' buttons.

8. Choose the **book** and **course** to import from.
9. Click **Next**

This screenshot shows the 'myeconlab' interface at the 'Choose Course' step (Step 3) of the 'Import Assignments' process. The top navigation bar and sidebar are identical to the previous screenshot. The progress bar now highlights Step 3. The 'Import into' section remains the same. A message instructs the user: 'Choose the book and course from which you would like to import, then click Next to see a list of assignments.' Below this, there are two dropdown menus: 'Book' (set to 'Miller: Economics Today: The Micro View 14e', labeled with a large '8') and 'Course' (set to 'Coord: Template Principles of Microeconomics', labeled with a large '9'). At the bottom, there are 'Cancel', 'Back', and 'Next' buttons.

10. **Select** all the assignments you wish to import.

11. Click **Import**

Show All Homework Quizzes Tests

10

<input checked="" type="checkbox"/>	Ch.	Assignment	Category	Creator	Creation Date
<input checked="" type="checkbox"/>	1	Chapter 1 Quiz	Q	Sondgeroth	07/15/08
<input checked="" type="checkbox"/>	2	Chapter 2 Quiz	Q	Sondgeroth	07/16/08
<input checked="" type="checkbox"/>	3	Chapter 3 Quiz	Q	Sondgeroth	07/17/08
<input checked="" type="checkbox"/>	4	Chapter 4 quiz	Q	Sondgeroth	07/20/08
<input checked="" type="checkbox"/>	5	Chapter 5 Quiz	Q	Sondgeroth	07/21/08
<input checked="" type="checkbox"/>	20	Chapter 20 Quiz	Q	Sondgeroth	07/22/08
<input checked="" type="checkbox"/>	21	Chapter 21 Quiz	Q	Sondgeroth	07/23/08
<input checked="" type="checkbox"/>	22	Chaper 22 Quiz	Q	Sondgeroth	08/22/08
<input checked="" type="checkbox"/>	23	Chapter 23 Quiz	Q	Sondgeroth	08/23/08
<input checked="" type="checkbox"/>	24	Chapter 24 Quiz	Q	Sondgeroth	08/23/08
<input checked="" type="checkbox"/>	25	Chapter 25 Quiz	Q	Sondgeroth	08/23/08
<input checked="" type="checkbox"/>	26	Chapter 26 Quiz	Q	Sondgeroth	08/23/08
<input checked="" type="checkbox"/>	27	Chapter 27 Quiz	Q	Sondgeroth	08/23/08
<input checked="" type="checkbox"/>	29	Chapter 29 Quiz	Q	Sondgeroth	08/23/08
<input checked="" type="checkbox"/>	33	Chapter 33 Quiz	Q	Sondgeroth	08/07/08
<input checked="" type="checkbox"/>	34	Chapter 34 Quiz	Q	Sondgeroth	08/07/08

☒ Import Assignment Settings

11

Cancel

◀ Back

Import

You will then see a summary screen detailing which exercises were not converted so you can find replacements. This same information will be sent to your MyEconLab registered email address.

MyEconLab 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.

3.1 The Demand Side of the Market

The screenshot shows the MyEconLab interface for Chapter 1.5. At the top, a progress bar shows 10 problems, with 2 correct and 6 of 10 complete. The current problem is Problem 1.5 (variation), which asks about the relationship between Jiffy peanut butter and Smucker's Strawberry jam. A definition pop-up for 'Substitutes' is visible, stating: 'Substitutes: Goods and services that can be used for the same purpose.' To the right, a graph titled 'Demand for Smucker's Strawberry jam' shows two downward-sloping demand curves, D₁ and D₂, on a coordinate system with 'Price' on the vertical axis and 'Quantity demanded (per week)' on the horizontal axis. The graph is part of an interactive exercise where the student is asked to use a line drawing tool to show the relationship between the goods.

Students can study on their own, or they can complete assignments created by their instructor. Within 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 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 summaries of the appropriate learning objective to remind students of key ideas while studying
- Pop-up key term definitions from the eText to help students master the vocabulary of economics
- Links to the important features of the eText, such as *Solved Problems*, *Making the Connection*, *An Inside Look*, and *Don't Let This Happen to You!*

- A graphing tool that is integrated into the various exercises to enable students to build and manipulate graphs so that students better understand how concepts, numbers, and graphs connect

The screenshot shows the MyEconLab interface. At the top, there's a navigation bar with numbered tabs (1-8) and a 'End of Chapter 4.4' label. Below this, a problem window titled 'Problem 4.4' is visible, stating: 'In the graph on the right, the demand for hamburger buns has changed because the price of hamburgers has risen from \$2.50 to \$2.60 per package.' To the right of the problem is a graph titled 'Hamburger buns' with the y-axis labeled 'Price (dollars per package of buns)' and a value of 4.00. A 'Guided Solution' window is open in the foreground, providing a definition of cross-price elasticities and the midpoint formula for cross-price elasticity of demand.

Problem 4.4. In the graph on the right, the demand for hamburger buns has changed because the price of hamburgers has risen from \$2.50 to \$2.60 per package.

Hamburger buns
Price (dollars per package of buns)
4.00

Guided Solution

Cross-price elasticities measure the change in quantity demanded of one product when the price of a **related** good changes. For example, hamburger buns are related to hamburger meat. The two goods complement each other. When consumption of one good increases, the amount consumed of the related good increases, also.

We calculate the cross-price elasticity of demand using the formula below.

$$\text{Cross-price elasticity of demand} = \frac{\text{Percentage change in quantity demanded of one good}}{\text{Percentage change in price of another good}} = \frac{(Q_2 - Q_1)}{\left(\frac{Q_1 + Q_2}{2}\right)} \div \frac{(P_2 - P_1)}{\left(\frac{P_1 + P_2}{2}\right)}$$

As when computing the price elasticity of demand, we use the midpoint formula. The only difference is instead of computing the percentage change in the good's own price, we use the percentage change in the price of the related good.

Press Continue to see more.

5 parts remaining

Continue Close

Additional MyEconLab Tools

MyEconLab includes the following additional features:

- **eText**—In addition to the portions of eText available as pop-ups or links, a fully searchable eText is available for students who wish to read and study in a fully electronic environment.
- **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.
- **Research Navigator (CourseCompass version only)**—Research Navigator provides extensive help on the research process and four exclusive databases of credible and reliable source material, including *The New York Times*, the *Financial Times*, and peer-reviewed journals.

Other Supplements for Instructors

- Two Test Item Files
- TestGen Computerized Test Program
- PowerPoint Lecture Presentation
- Instructor's Resource CD-ROM with *Test Item Files*, *Instructor's Manual*, and *PowerPoint presentations*
- Classroom Response Systems
- BlackBoard and WebCT Course Content
- CourseSmart eTextbook

Two Test Item Files (in print format and electronic TestGen format)

Two *Test Item Files* accompany the text. Each *Test Item File* includes more than 2,000 multiple-choice, short answer, and graphing questions.

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 objective

Graphing

AACSB (see description that follows)

Page number

Special feature in the main book: chapter-opening business example, *Economics in YOUR Life!*, *Solved Problem*, *Making the Connection*, *Don't Let this Happen to You!* and *An Inside Look*.

The Association to Advance Collegiate Schools of Business (AACSB)

The test bank authors have connected select test bank questions to the general knowledge and skill guidelines found in the AACSB standards.

What is the AACSB?

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 Learning Standards.

What are AACSB Learning Standards?

One of the criteria for AACSB accreditation is the quality of the curricula. Although no specific courses are required, the AACSB expects a curriculum to include learning experiences in such areas as:

- Communication
- Ethical Reasoning
- Analytic Skills
- Use of Information Technology
- Multicultural and Diversity
- Reflective Thinking

These six categories are AACSB Learning Standards. 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 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 above. In addition, the tagged questions may help instructors identify potential applications of these skills. 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 banks; edit existing graphics and create new graphics; 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 banks can be downloaded from the Instructor's Resource Center (www.pearsonhighered.com/hubbard).

PowerPoint® Slides (3 sets)

Three sets of PowerPoint® slides, prepared by Fernando Quijano and Yvonn Quijano, 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. For more information on Pearson Education's partnership with CRS, see the description below. 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).

Instructor's Resource CD-ROM

The *Instructor's Resource CD-ROM* contains all the faculty and student resources that support this text. Instructors have the ability to access and edit the

- *Instructor's Manual*,
- *Test Item Files*, and
- *PowerPoint presentations*.

By simply clicking on a chapter or searching for a keyword, faculty can access an interactive library of resources. Faculty can pick and choose from the various supplements and export them to their hard drives.

Blackboard and WebCT Course Content

Prentice Hall offers fully customizable course content for the Blackboard and WebCT Course Management Systems.

Classroom Response Systems

Classroom Response Systems (CRS) is an exciting new wireless polling technology that makes large and small classrooms even more interactive because it enables instructors to pose questions to their students, record results, and display the results instantly. Students can answer questions easily, using compact

remote-control transmitters. Prentice Hall has partnerships with leading classroom response systems providers and can show you everything you need to know about setting up and using a CRS system. We'll provide the classroom hardware, text-specific PowerPoint slides, software, and support, and we'll also show you how your students can benefit! Learn more at www.pearsonhighered.com/crs.



eTextbook

CourseSmart goes beyond traditional expectations providing instant, online access to the textbooks and course materials you need at a lower cost to students. And, even as students save money, you can save time and hassle with a digital textbook that allows you to search the most relevant content at the very moment you need it. Whether it's evaluating textbooks or creating lecture notes to help students with difficult concepts, CourseSmart can make life a little easier. See how when you visit www.coursesmart.com/instructors.

Other Supplements for Students

Study Guide

The study guide contains the following features:

- Chapter summary
- Discussion of each learning objective
- Section-by-section review of the concepts presented
- Helpful study hints
- Additional *Solved Problems* to supplement those in the text
- Key terms with definitions
- A self-test, including 40 multiple-choice questions, plus a number of short-answer and true/false questions, with accompanying answers and explanations

PowerPoint Slides

For student use as a study aide or note-taking guide, PowerPoint slides, may be downloaded from the companion Web site, at www.pearsonhighered.com/hubbard. The slides include:

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



eTextbook

CourseSmart goes beyond traditional expectations providing instant, online access to the textbooks and course materials students need at lower cost. They can also search, highlight, and take notes anywhere at anytime. See all the benefits to students at www.coursesmart.com/students.

Economics: Foundations and Models

Brief Chapter Summary and Learning Objectives

1.1 Three Key Economic Ideas (pages 4–7)

Explain these three key economic ideas: People are rational. People respond to incentives. Optimal decisions are made at the margin.

- People must make choices as they try to attain their goals. People make choices because resources are scarce. Most of economics analyzes what happens in markets.

1.2 The Economic Problem That Every Society Must Solve (pages 7–11)

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?

- A limited amount of resources can produce a limited amount of goods and services.
- The cost of producing more of one good is the value of what must be given up to produce it.

1.3 Economic Models (pages 11–14)

Understand the role of models in economic analysis.

- Economists use models—simplified versions of reality—to analyze real-world issues.
- Economists accept a model if it leads to hypotheses that are confirmed by statistical analysis.

1.4 Microeconomics and Macroeconomics (pages 14–15)

Distinguish between microeconomics and macroeconomics.

1.5 A Preview of Important Economic Terms (pages 15–16)

Become familiar with important economic terms.

Appendix: Using Graphs and Formulas (pages 24–35)

Review the use of graphs and formulas.

Key Terms

Allocative efficiency, p. 10. A state of the economy in which production is in accordance with consumer preferences; in particular, every good or service is produced up to the point where the last unit provides a marginal benefit to society equal to the marginal cost of producing it.

Centrally planned economy, p. 9. An economy in which the government decides how economic resources will be allocated.

Economic model, p. 4. A simplified version of reality used to analyze real-world economic situations.

Economic variable, p. 11. Something measurable that can have different values, such as the wages of software programmers.

Economics, p. 4. The study of the choices people make to attain their goals, given their scarce resources.

Equity, p. 10. The fair distribution of economic benefits.

Macroeconomics, p. 14. The study of the economy as a whole, including topics such as inflation, unemployment, and economic growth.

Marginal analysis, p. 7. Analysis that involves comparing marginal benefits and marginal costs.

Market, p. 4. A group of buyers and sellers of a good or service and the institution or arrangement by which they come together to trade.

Market economy, p. 9. An economy in which the decisions of households and firms interacting in markets allocate resources.

Microeconomics, p. 14. The study of how households and firms make choices, how they interact in markets, and how the government attempts to influence their choices.

Mixed economy, p. 10. An economy in which most economic decisions result from the interaction of buyers and sellers in markets but in which the government plays a significant role in the allocation of resources.

Normative analysis, p. 12. Analysis concerned with what ought to be.

Opportunity cost, p. 8. The highest-valued alternative that must be given up to engage in an activity.

Positive analysis, p. 12. Analysis concerned with what is.

Productive efficiency, p. 10. A situation in which a good or service is produced at the lowest possible cost.

Scarcity, p. 4. A situation in which unlimited wants exceed the limited resources available to fulfill those wants.

Trade-off, p. 8. The idea that because of scarcity, producing more of one good or service means producing less of another good or service.

Voluntary exchange, p. 10. A situation that occurs in markets when both the buyer and seller of a product are made better off by the transaction.

Chapter Outline

Microsoft Versus the U.S. Congress on Worker Visas

U.S. law restricts the number of foreign “specialty workers” who may enter the United States under the H-1B visa program to 65,000 per year. Despite arguments from business executives such as Bill Gates, who claim that the visa program has resulted in a “critical shortage of scientific talent,” in 2009 Congress tightened restrictions on the immigration of technical workers to the United States. Economists and policymakers have debated whether restrictions on the immigration of technical workers are good or bad for the U.S. economy.

>>Teaching Tips

There are special features that open and close each chapter of the book. The introduction, or chapter opener, uses a real-world business example to preview the economic issues discussed in the chapter. The end of the chapter includes a feature titled **An Inside Look** that consists of an article from a magazine or newspaper plus analysis and questions. The article links back to the topic of the chapter opener. **An Inside Look** in this chapter uses an article from the *Economist* to analyze immigration policy.

A feature titled **Economics in YOUR LIFE!** complements the business example that opens the chapter. **Economics in YOUR LIFE!** poses questions that help students make a personal connection with the chapter theme. At the end of the chapter, the authors use the concepts described in the chapter to answer these questions. In this chapter students are asked if they will be competing with immigrant workers when they apply for their next job. You can use these features—the chapter opener, **Economics in YOUR LIFE!**, and **An Inside Look**—as the basis for classroom discussion, homework assignments, and examination questions. This Instructor’s Manual includes one extra **Economics in YOUR LIFE!** for each chapter so that you can present material in class that is different from the material found in the textbook. Visit www.myeconlab.com for current **An Inside Look** news articles.

People must make choices as they try to attain their goals. The choices people make represent the trade-offs made necessary by scarcity. **Scarcity** is a situation in which unlimited wants exceed the limited resources available to fulfill those wants. **Economics** is the study of the choices people make to attain their goals, given their scarce resources. An **economic model** is a simplified version of reality used to analyze real-world economic situations.

>>Teaching Tips

It is important to define economics and explain what scarcity means at the beginning of the course, especially because many students will not have studied economics previously. Some students will better understand what scarcity means if you give them examples of things that are not scarce. You can provide examples of “free resources”—sand on a beach, fresh air—and ask students to contribute their own examples. Your students will quickly learn that the list of free resources is very much shorter than the list of scarce resources.

1.1

Three Key Economic Ideas (pages 4–7)

Learning Objective: Explain these three key economic ideas: People are rational. People respond to incentives. Optimal decisions are made at the margin.

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. There are three important ideas students should learn to understand

how people make choices and interact in markets: People are rational, people respond to economic incentives, and optimal decisions are made at the margin.

A. People Are Rational

This assumption does not mean that economists believe everyone knows everything or always makes the “best” decision. Rational individuals weigh the benefits and costs of each action and choose an action if the benefits outweigh the costs.

B. People Respond to Economic Incentives

Economists emphasize that consumers and firms consistently respond to economic incentives.

C. Optimal Decisions Are Made at the Margin

Economists use the word marginal to mean an extra or additional benefit or cost of a decision. The optimal decision is to continue any activity to the point where the marginal benefit equals the marginal cost. **Marginal analysis** involves comparing marginal benefits and marginal costs.

>>Teaching Tips

You don’t need to spend a lot of class time with explanations, as subsequent chapters will reinforce students’ understanding of what markets are and the “three key economic ideas.” But you can provide examples of unconventional markets—for example, an online book vendor—to help students realize that some markets do not have well-defined geographic dimensions, and interaction between buyers and sellers can be very impersonal. Students often assume that rational people who respond to economic incentives are greedy and selfish. This is not always true. Many rational people contribute to charities and receive satisfaction from working with and helping others. The textbook includes a **Making the Connection** feature in this section to discuss a news story that is related to one of the three key ideas: people respond to incentives. In 2007, the government of Estonia, a small Baltic nation, began to offer women financial incentives to have children. There is some evidence (though not conclusive) that these incentives have had the intended effect. To test students’ understanding, you can assign the related end-of-chapter problem, 1.7

This section of the chapter includes a **Solved Problem** that shows the step-by-step process of solving an economic problem related to a chapter learning objective. **Solved Problem 1-1** provides an example of how Apple Computers can increase its profits through the application of marginal analysis. You can work through the **Solved Problem** in class and assign the related problems—1.4 through 1.6—as homework. Each chapter of this Instructor’s Manual includes additional **Making the Connection** features and **Extra Solved Problems** that are not in the main book so that you have unique problems to present in class or to assign as homework.

1.2

The Economic Problem That Every Society Must Solve (pages 7–11)

Learning Objective: 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?

Any society faces the economic problem that it has only a limited amount of economic resources and so can produce only a limited amount of goods and services. Society faces trade-offs. A **trade-off** is the idea that because of scarcity, producing more of one good or service means producing less of another good or service. Every activity has an opportunity cost. **Opportunity cost** is the highest-valued

alternative that must be given up to engage in an activity. Trade-offs force society to answer three fundamental questions:

1. *What* goods and services will be produced?
2. *How* will the goods and services be produced?
3. *Who* will receive the goods and services produced?

A. What Goods and Services Will Be Produced?

The answer to this question is determined by the choices that consumers, firms, and the government make. Each choice made comes with an opportunity cost, measured by the value of the best alternative given up.

B. How Will the Goods and Services Be Produced?

Firms choose how to produce the goods and services they sell. In many cases, firms face a trade-off between using more workers or using more machines.

C. Who Will Receive the Goods and Services Produced?

In the United States, who receives the goods and services produced depends largely on how income is distributed. An important policy question is whether the government should intervene to make the distribution of income more equal. There is disagreement over whether current attempts to redistribute income are sufficient or whether there should be more or less redistribution.

D. Centrally Planned Economies versus Market Economies

Societies organize their economies in two main ways. A **centrally planned economy** is an economy in which the government decides how economic resources will be allocated. A **market economy** is an economy in which the decisions of households and firms interacting in markets allocate economic resources. Today, only a few small countries, such as Cuba and North Korea, still have completely centrally planned economies. One of the attractive features of markets is that they reward hard work. Generally, the more extensive the training a person has received and the longer the hours the person works, the higher the person's income will be.

E. The Modern "Mixed" Economy

The high rates of unemployment and business bankruptcies of the Great Depression of the 1930s caused a dramatic increase in government intervention in the economy in the United States and other market economies.

Some government intervention is designed to raise the incomes of the elderly, the sick, and people with limited skills. In recent years, government intervention has expanded to meet social goals such as the protection of the environment and the promotion of civil rights. Some economists argue that government intervention makes it more accurate to refer to the U.S. and other nations as mixed economies rather than market economies. A **mixed economy** is an economy in which most economic decisions result from the interaction of buyers and sellers in markets but in which the government plays a significant role in the allocation of resources. In recent years, China has moved from being a centrally planned economy to being a more mixed economy. Although China remains a political dictatorship, production of most goods is determined in markets.

F. Efficiency and Equity

Market economies tend to be more efficient than planned economies. There are two types of efficiency. **Productive efficiency** is the situation in which a good or service is produced at the lowest possible cost.

Allocative efficiency is a state of the economy in which production is in accordance with consumer preferences; in particular, every good or service is produced up to the point where the last unit provides a marginal benefit to society equal to the marginal cost of producing it.

Voluntary exchange is a situation that occurs in markets when both the buyer and seller of a product are made better off by the transaction.

Markets promote efficiency but don't guarantee it. Inefficiency arises from various sources. Sometimes governments may reduce efficiency by interfering with voluntary exchanges in markets. The production of some goods may damage the environment when firms ignore the costs of environmental damage. In this case, government intervention can increase efficiency.

Society may not find efficient economic outcomes to be desirable. Many people prefer economic outcomes that they consider fair or equitable even if these outcomes are less efficient. **Equity** is the fair distribution of economic benefits. Equity is harder to define than efficiency. Programs designed to increase equity may reduce efficiency.

>>Teaching Tips

Ask students for examples of government regulation of private markets in the United States. Responses can include the prohibition of prostitution (in all but one county in Nevada); making the sale of cocaine and other addictive drugs illegal; minimum age requirements for the purchase of alcoholic beverages and cigarettes; the prohibition of the sale of new drugs before their effectiveness is demonstrated through government supervised tests. Ask students whether one of these examples promotes equity or fairness. The difficulty of defining equity will soon become apparent.

To show how students may value equity less than they claim, an economics teacher at a college in Western New York once told her students at the beginning of her course that their grades would be auctioned to the highest bidders. Because grades are typically normally distributed, she offered to sell a few A grades, a few more B grades, etc. Although the announcement produced shock and grumbling, the auction proceeded, and frenzied bidding took place for the A grades. As prices for A grades rose, bidding switched to B grades. Because few students bothered to bid for C grades, one enterprising student bid on several such grades in the belief that those who lost out on getting an A or B would have to buy their C grades from him—for a higher price than he paid! After about a week, the instructor informed the class the auction was intended only as an economics lesson; they would have to earn their grades the old-fashioned way.

Extra Solved Problem 1-2

Advising New Government Leaders

Supports Learning Objective 1.2: 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?

Suppose that a poor nation experienced a change in government leadership. Prior to this change the nation employed a centrally planned economy to allocate its resources. The new leaders are willing to try a different system if someone can convince them that it will yield better results. They hire an economist from a nation with a market economy to advise them and will order their citizens to follow the economist's recommendations for change. The economist suggests that a market economy replace central planning to answer the nation's economic questions (*what*, *how* and *who*?).

- What will the economist suggest the leaders order their citizens to do?
- Do you believe the leaders and citizens will accept the economist's suggestions?

SOLVING THE PROBLEM:

Step 1: Review the chapter material.

The problem concerns which economic system a nation must select, so you may want to review the section “Centrally Planned Economies versus Market Economies” on page 9 of the textbook.

Step 2: What will the economist suggest the leaders order their citizens to do?

Market economies allow members of households to select occupations and purchase goods and services based on self-interest and allow privately-owned firms to produce goods and services based on their self-interests. Therefore, the economist would advise the leaders of the poor country to not issue any orders. Government officials should have no influence over individual decisions made in markets.

Step 3: Do you believe the leaders and citizens will accept the economist's suggestions?

Even democratically elected leaders, especially those with significant government involvement in the nation's resource allocation, will find it difficult to accept the new system. They may wonder how self-interested individuals will produce and distribute goods and services so as to promote the welfare of the entire nation. This new system requires a significant reduction in government influence in people's lives; history has shown that government officials are often reluctant to give up this influence. Acceptance is most likely when the leaders have some knowledge and experience with the successful operation of a market economy in other countries. Ordinary citizens are more likely to accept the economist's suggestions because they will have more freedom to pursue their own economic goals.

Extra Making the Connection | Estonia Chooses a Market Economy

Citizens from nations that have market economies often take for granted that they need to answer the three fundamental questions: *What* goods and services will be produced? *How* will the goods and services be produced? *Who* will receive the goods and services produced? The United States, for example, uses a market economy to answer these questions. The demise of the Soviet Union and the fall of the Berlin Wall in 1989 offered a rare opportunity for many nations to consider abandoning their centrally planned economies for a system in which the decisions of households and firms interacting in markets provide answers to the fundamental questions. Making this type of change is not easy, but some newly independent nations that chafed under the rule of the Soviet Union were eager to try. Estonia, a tiny Baltic nation located just south of Finland, wasted no time following its declaration of independence from the Soviet Union in 1991. Under the leadership of prime minister Mart Laar, Estonia introduced sweeping economic reforms including the abolishment of most tariffs, privatization of many government functions, and dramatic tax cuts for individuals and firms. The Index of Freedom, published annually by the Heritage Foundation and the *Wall Street Journal*, surveys 183 countries and grades them as “free,” “mostly free,” “moderately free,” “mostly unfree,” and “repressed.” In 2009, Estonia ranked 13th with a score of 76.4 percent on the Index of Freedom. The Heritage Foundation noted that “Estonia enjoys high levels of investment freedom, financial freedom, property rights, freedom from corruption.” Economic freedom is positively correlated with material benefit—an important selling point for those who urge economic reforms. “High GDP growth upwards of 9 percent annually over the past two decades has helped revitalize [Estonia's] society.”

Sources: “Estonia information on economic freedom” <http://www.heritage.org/Index/Country/Estonia>; Mary Anastasia O'Grady, “Wish They All Could Be Like Estonia,” *Wall Street Journal*, January 4, 2006.

1.3

Economic Models (pages 11–14)

Learning Objective: Understand the role of models in economic analysis.

Models are simplified versions of reality used to analyze real-world situations. To develop a model, economists generally follow five steps.

1. Decide on the assumptions to use in developing the model.
2. Formulate a testable hypothesis.
3. Use economic data to test the hypothesis.
4. Revise the model if it fails to explain well the economic data.
5. Retain the revised model to help answer similar economic questions in the future.

A. The Role of Assumptions in Economic Models

Models are based on making assumptions because models must be simplified to be useful. For example, when using models, economists make behavioral assumptions about the motives of consumers and firms. Economists assume consumers will buy goods and services that will maximize their satisfaction. Economists assume firms will act to maximize their profits.

B. Forming and Testing Hypotheses in Economic Models

A hypothesis in an economic model is a statement that may be correct or incorrect about an economic variable. An **economic variable** is something measurable that can have different values, such as the wages of software programmers. We must test a hypothesis before we can accept it. To test a hypothesis we analyze statistics on the relevant economic variables. Economists accept and use an economic model if it leads to hypotheses that are confirmed by statistical analysis.

C. Normative and Positive Analysis

Positive analysis is analysis concerned with what is. **Normative analysis** is analysis concerned with what ought to be.

D. Economics as a Social Science

Because economics studies the actions of individuals, it is a social science. Economics considers human behavior in every context, not just in the context of business. Economists have played an important role in formulating government policies in areas such as the environment, health care, and poverty.

>>Teaching Tips

This section includes a **Making the Connection** feature that asks if the federal government should have increased restrictions on the immigration of skilled workers. Problem 3.7 is related to this topic. **Don't Let This Happen to YOU!** warns students not to confuse positive and normative economic analysis. See related problem 3.9

Extra Making
the
Connection

When Economists Disagree: A Debate over Outsourcing

There is an old saying in the newspaper business that it's not news when a dog bites a man, but it is news when a man bites a dog. In 2004, many newspapers ran a "man bites dog" story concerning economics. Most economists believe that international trade—including the trade that results when firms move production offshore—increases economic efficiency and raises incomes.

It was news, then, when Paul Samuelson, an MIT economist and a winner of the Nobel Prize in Economics, wrote an article in the *Journal of Economic Perspectives* questioning whether incomes in the United States will be higher as a result of the outsourcing of jobs to India and China. Samuelson presented a model of the effects of outsourcing that can be illustrated with the following hypothetical case: Suppose a bank in New York has been using a company in South Dakota to handle its telephone customer service. The bank then switches to using a company in Bangalore, India, that pays its workers much lower wages. Samuelson argued that even when the workers fired by the South Dakota firm eventually find new jobs, the jobs may pay lower wages. If outsourcing becomes widespread enough, Samuelson argued, it may result in a significant decline in U.S. incomes.

Many economists objected to Samuelson's argument. One economist who wrote a rebuttal to Samuelson was Jagdish Bhagwati, a former student of Samuelson's and a professor of economics at Columbia University. Bhagwati argued that in Samuelson's example, the wages of South Dakota call center workers were reduced by outsourcing, but the costs to the bank were also reduced, which would allow the bank to reduce the prices it charged its customers. In Bhagwati's model, these gains to consumers from lower prices more than offset the loss to workers from lower wages, so the United States experiences a net gain from outsourcing. Samuelson argued, though, that if the United States exports the product—in this case banking services—to other countries, the lower price hurts the exporting firms. In that case, the United States might still be hurt by outsourcing.

This brief summary does not do full justice to the models of Samuelson and Bhagwati, which are too complicated for us to cover in this chapter. We can, however, discuss the sources of the disagreement between these two economists. We have seen that economists sometimes disagree on the assumptions that should be used in building a model. That is not the case here: Samuelson and Bhagwati basically agree on the model and the assumptions to be used. Instead, they disagree over how to interpret the relevant economic statistics. Bhagwati argues that the number of U.S. jobs moving to other countries has been relatively small, amounting to about 1 percent of the jobs created in the U.S. economy each year. He also argues that the jobs lost to outsourcing tend to be low-wage jobs, such as telephone customer service or data entry, and are likely to be replaced by higher-wage jobs. Samuelson argues that the impact of outsourcing is greater than Bhagwati believes, and he is less optimistic that newly created jobs in the United States will pay higher wages than the jobs lost to outsourcing.

The debate between Samuelson and Bhagwati demonstrates that economics is an evolving discipline. New models are continually being introduced, and new hypotheses are being formulated and tested. We can expect the debate over the economic impact of outsourcing to continue to be lively.

Sources: Paul A. Samuelson, "Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization," *Journal of Economic Perspectives*, Vol. 18, No. 3, Summer 2004, pp. 135–146; Jagdish Bhagwati, Arvind Panagariya, and T. N. Srinivasan, "The Muddles Over Outsourcing," *Journal of Economic Perspectives*, Vol. 18, No. 4, Fall 2004, pp. 93–114; and Steve Lohr, "An Elder Challenges Outsourcing's Orthodoxy," *New York Times*, September 9, 2004, p. C1.

Question: The *Making the Connection* that discusses the debate between Paul Samuelson and Jagdish Bhagwati over outsourcing mentions that the two economists disagree over how to interpret the relevant economic statistics. What economic statistics would be most useful in evaluating the positions these economists hold? Assuming these statistics are available or could be gathered, are they likely to finally resolve the debate?

Answer: It would be helpful to know how many jobs are lost to outsourcing and how many jobs are gained. It would also be helpful to know what kinds of jobs are lost and gained—for example, the mix of skilled and unskilled jobs lost and gained. But even if these data were available, the debate would probably not end as we would never be able to compare the outcome with outsourcing to the hypothetical world in which there is no outsourcing.

Extra Solved Problem 1-3**Sunspot Activity and Economic Growth**

Supports Learning Objective 1.3: Understand the role of models in economic analysis.

Sunspots are sites of strong magnetic fields that appear as dark regions on the surface of the sun. The number of sunspots varies over an 11-year cycle. British economist William Stanley Jevons (1835-1882) advanced a theory, or model, of economic growth based on the occurrence of sunspots. Changes in the number of sunspots cause variations in the earth's temperature and, according to this theory, changes in agricultural output. Agriculture accounted for a much greater share of total output of the economies of Great Britain and other nations in Jevons' time than in modern times.

Source: *History of Economic Theory and Thought. Jevons Sunspot and Commercial Activity*
<http://www.economictheories.org/2008/08/jevons-sunspots-and-commercial-activity.html>

How can we develop and test a sunspot model of economic growth?

SOLVING THE PROBLEM:**Step 1: Review the chapter material.**

The problem concerns how models are used to analyze economic issues, so you may want to review the section "Economic Models," which begins on page 11 of the textbook.

Step 2: To develop and test a sunspot model of economic growth, we follow these steps:

1. *Decide on the assumptions to be used in developing the model.* Two assumptions of Jevons' model are: (a) Changes in the earth's temperature are related to the amount of sunspot activity. (b) Changes in the earth's temperature cause variations in the value of a nation's output of goods and services.
2. *Formulate a testable hypothesis.* The value of a nation's output of goods and services is greater in years of greater than average sunspot activity than in years of lower than average sunspot activity.
3. *Use economic data to test the hypothesis.* Compare changes in sunspot activity with changes in a standard measure of the value of a nation's output of goods and services; the most common measure is Gross Domestic Product or GDP. Because sunspot activity varies in 11 year cycles, data should cover at least one of these cycles. If data for the United States are used, years of greater than average sunspot activity should be associated with years of above average economic growth, while years of lower than average sunspot activity should be associated with years of below average economic growth.
4. *Revise the model if it fails to explain well the economic data.* The model could fail if factors other than sunspot activity have a significant impact on economic growth. These factors include variations in the price of energy; investments in new technologies; changes in tax rates and other government policies. A revised model would examine the separate influence of sunspots and these other factors.
5. *Retain the revised model to help answer similar economic questions in the future.* Although the sunspot model is based on a plausible relationship between climate changes and changes in agricultural production, agriculture accounts for a much smaller percentage of the output produced in the United States, Great Britain and other western nations in the 21st century than it did in the 19th century. In turn, other factors have been shown to be important in affecting economic growth.

1.4**Microeconomics and Macroeconomics (pages 14–15)**

Learning Objective: Distinguish between microeconomics and macroeconomics.

Microeconomics is the study of how households and firms make choices, how they interact in markets, and how the government attempts to influence their choices.

Macroeconomics is the study of the economy as a whole, including topics such as inflation, unemployment, and economic growth.

Extra Solved Problem 1-4***Watching From On High—and Low***

Supports Learning Objective 1.4: Distinguish between microeconomics and macroeconomics.

Sports fans are used to seeing game action on television from different camera angles. For popular events such as the Olympics, World Series, and Super Bowl, network coverage captures action from ground level as well as from higher locations. At many events there is a camera located in a blimp that circles above the venue where the event is held. The aerial view of the blimp's camera is often visually appealing but is never broadcast for very long; the athletes can only be seen from a great distance, if they can be seen at all. Coverage of the events often includes a view from a mobile or "sideline" camera that can zoom in on individual players or fans sitting in the stands, a degree of detail in stark contrast to that provided by the aerial view. How do the different camera angles help to explain the difference between microeconomics and macroeconomics?

SOLVING THE PROBLEM:**Step 1: Review the chapter material.**

The problem concerns the differences between microeconomics and macroeconomics, so you may want to review the section "Microeconomics and Macroeconomics" on page 14 of the textbook.

Step 2: Compare the focus of microeconomics with the television coverage of a sports event.

Microeconomics focuses on how individual households and firms make choices, how they interact in markets, and how the government attempts to influence their choices. This focus is similar to that of a sideline camera at a football game. The camera can focus in on an individual player or fan.

Step 3: Compare the focus of macroeconomics with the television coverage of a sports event.

Macroeconomics is the study of the economy as a whole, including topics such as inflation, unemployment, and economic growth. Macroeconomics does not study the decisions made by individuals but the consequences of the actions of all decision makers in an economy. This is similar to the blimp's aerial view of the venue where a sports event occurs. One can see the entire venue, but the blimp's point of view is too far away to see any individual player or fan.

Extra Making the Connection | Macroeconomic and Microeconomic Analysis

Economists typically separate the study of microeconomics—the study of how households and firms make choices and interact in markets—from macroeconomics—the study of the economy as a whole. But many economic issues can be viewed from both a microeconomic and a macroeconomic perspective. An example is Jesper Kroll’s comments concerning the prospects for Japan’s recovery from the 2008-09 recession. Kroll, president of TRJ, a Tokyo-based investment firm, explained: “The downturn has given corporations an excuse to restructure and prepare for the eventual upturn—and macro- and micro-economic forces are aligning to help boost this recovery.” From the macroeconomic point of view, Kroll noted that “Corporate input costs are now falling...creating a strong base for companies’ profit margins to expand...local retailers are snapping up prime location real estate at bargain basement prices...Japan is a net importer of basically all its energy and commodities, so the recent global deflation cycle has worked to boost competitiveness.” Kroll used microeconomic analysis to argue that many Japanese companies reduced their production costs during the recession. “In sharp contrast to the 1990s...managers have been ruthless in cutting labor costs...The expensive baby boom generation is now moving off payroll and into retirement. The net effect...is a likely drop in total employment costs of as much as 10% this year.”

Source: Jesper Kroll, “The Upside to Japan’s Recession,” *Wall Street Journal Asia*, June 19, 2009.

1.5

A Preview of Important Economic Terms (pages 15–16)

Learning Objective: Become familiar with important economic terms.

This section provides a brief definition and preview of terms students will see throughout the book: entrepreneur, innovation, technology, firm (company or business), goods, services, revenue, profit, household, factors of production or economic resources, capital, and human capital.

Extra Economics in YOUR LIFE! Is Cheating an Optimal Decision?

In spring of 2007, Duke University announced that it had expelled 34 MBA students for cheating. Equally disturbing was a survey that found 56 percent of graduate business students had cheated in their academic work (47 percent of graduate students in other fields of study admitted to cheating). Recent evidence showed that widespread cheating was not confined to the United States. London’s *Daily Telegraph* reported that during the summer of 2008 nearly 4,000 students were caught cheating on standardized exams that are used for admission to colleges and universities in the United Kingdom. Economic reasoning can explain the incidence of cheating. Economists assume that decision-makers—students and non-students alike—are rational. They compare the benefits and costs of their options and choose options for which the expected benefits exceed the expected costs. The benefits of (successful) cheating include higher grades (for an MBA student higher grades may result in a better job), while the costs arise from the probability of getting caught. New technology has made it easier for students to cheat; for example, the widespread use of cell phones and Internet access makes it easier (less costly) to share exam answers and buy term papers.

Sources: Charlotte Allen, “Their Cheating Hearts,” *Wall Street Journal*, May 11, 2007, page W11. Graeme Paton, “Thousands of students cheating in exams,” *www.telegraph.co.uk*, March 18, 2009.

Question: For the sake of argument, let's assume that you would never cheat—under what circumstances would you be *more or less likely* to cheat on an economics examination?

Answer: First of all, understand that your economics instructor will be very pleased if you would never cheat under any circumstances. But the benefit of cheating is greater when: (a) the positive consequences of receiving a high grade are great (for example, an A grade is necessary in order to maintain a scholarship, gain admittance to graduate school, or get a good job offer) (b) the probability of getting caught is low (the instructor gives the same multiple-choice exam to all students in a large classroom with no supervision). Reducing the benefit and increasing the cost of getting caught will reduce the incidence of cheating. If appeals to personal integrity are not enough to convince students not to cheat, then a more effective deterrent may be for potential employers to let students know that they fire their dishonest employees.

Extra **INSIDE LOOK** News Article to Use in Class

Visit www.myeconlab.com for current **Inside Look** news articles.

Appendix

Using Graphs and Formulas (pages 24–35)

Learning Objective: Review the use of graphs and formulas.

Graphs simplify economic ideas and help make ideas more concrete. Economists and policymakers can use graphs to help solve real-world problems.

Graphs of One Variable

Figure 1A-1 displays examples of two common types of graphs: bar graph and pie chart. The height of the bars in the bar graph represents the market shares of automobile firms. The pie chart shows the same information with market shares represented by the size of the pie's slices. Information on economic variables can also be displayed in time-series graphs. These graphs are displayed on a coordinate grid. The vertical axis (*y*-axis) of a coordinate grid measures the value of one variable. The point where the vertical axis intersects the horizontal axis is the origin. The horizontal axis of a coordinate grid measures the value of another variable. The points in a coordinate grid represent the values of the two variables. Figure 1A-2 illustrates examples of time-series graphs.

>>Teaching Tips

Examples of bar graphs, pie charts, and time-series graphs are shown in the appendix. Students should be able to read and understand the graphs in Figures 1A-1 and 1A-2 on their own. Most of the graphs they will encounter in microeconomics will be graphs of two variables.

Graphs of Two Variables

Both microeconomics and macroeconomics use two-variable graphs extensively. Figure 1A-3 illustrates the graph of a linear or straight-line demand curve where price is measured along the vertical axis and quantity is measured along the horizontal axis.

A. Slopes of Lines

The slope of a straight line indicates how much the variable measured along the y-axis changes as the variable measured along the x-axis changes. Slope can be measured between any two points on the line because the slope of a straight line has a constant value. Slope can be expressed as the change in the value measured on the vertical axis divided by the change in the value measured on the horizontal axis; slope can also be expressed using the Greek letter delta (Δ) to stand for the change in a variable (slope = $\Delta y / \Delta x$). The slope is also referred to as the rise over the run.

$$\text{Slope} = \frac{\text{Change in value on the vertical axis}}{\text{Change in the value on the horizontal axis}} = \frac{\Delta y}{\Delta x} = \frac{\text{Rise}}{\text{Run}}$$

B. Taking into Account More Than Two Variables on a Graph

The demand curve in Figure 1A-4 shows the relationship between the price of pizza and the quantity of pizza sold, but the quantity of any good sold depends on more than just the price of the good. Allowing other variables to change will cause the position of the demand curve in the graph to change. The table in Figure 1A-5 shows the effect of a change in the price of hamburgers on the quantity of pizza demanded. By shifting the demand curve we take into account the effect of changes in a third variable.

C. Positive and Negative Relationships

Sometimes the relationship between two variables is negative, as in the case with the price of pizza and the quantity of pizza demanded. The relationship between two variables can be positive, as in Figure 1A-6 which shows values for income and consumption spending in the United States for the years 2005-2008.

D. Determining Cause and Effect

Inferring cause and effect relationships by observing graphs can lead to incorrect conclusions. One reason for this is that there may be an omitted variable that is not accounted for in the graph. A related problem in determining cause and effect is reverse causality; this occurs when we conclude that changes in variable X cause changes in variable Y, when changes in variable Y cause changes in variable X.

E. Are Graphs of Economic Relationships Always Straight Lines?

The relationship between two variables is linear when it can be represented by a straight line. Few economic relationships are actually linear. However, it is often useful to approximate a nonlinear relationship with a linear relationship.

F. Slopes of Nonlinear Curves

To measure the slope of a nonlinear curve at a particular point, we must measure the slope of a tangent to the curve at that point. A tangent line touches the curve at only one point. The slope of a tangent is measured in the same way as the slope of any straight line.

Formulas

This section reviews several useful formulas and shows how to use them.

A. Formula for a Percentage Change

The formula for a percentage change between two variables for any two periods:

$$\text{Percentage change} = \frac{\text{Value in the second period} - \text{Value in the first period}}{\text{Value in the first period}} \times 100$$

B. Formulas for the Areas of a Rectangle and a Triangle

The formula for the area of a rectangle is $\text{base} \times \text{height}$. The formula for the area of a triangle is $\frac{1}{2} \times \text{base} \times \text{height}$.

>>Teaching Tips

You can assign the appendix as an “on your own” reading. But don’t assume students will understand the formula for computing a slope or a percentage change. Reviewing these formulas in class will be time well spent, either at this point in the course or when these formulas are first applied. Unlike bar charts and pie charts, students will need to use graphs of two variables and percentage changes often throughout the remainder of the text.

SOLUTIONS TO END-OF-CHAPTER EXERCISES

Answers to *Thinking Critically* Questions

1. Universities and research laboratories in America are now manned disproportionately by immigrants, who make up 47 percent of scientists and engineers. Immigrants accounted for two-thirds of the net addition to America’s stock of such workers between 1995 and 2006. With immigrants making up such a large fraction of existing workers, and also making up a large fraction of newly hired workers, it is likely that firms would have difficulty finding enough qualified domestic workers to fill all of these positions.
2. The article argues that knowledge is a non-rival good and ideas feed off each other. For example, when one scientist comes up with an idea, and all scientists have access to the idea, then another scientist could come up with the next advance of the original idea. Without both scientists, the final product would not have been achieved.

1.1 Three Key Economic Ideas

Learning Objective: Explain these three key economic ideas: People are rational. People respond to incentives. Optimal decisions are made at the margin.

Review Questions

1.1 “People are rational” is the assumption that decision makers explicitly or implicitly weigh the benefits and costs of each action and then choose an action only if the benefits are expected to outweigh the costs. “People respond to incentives” means that people respond to economic incentives—they may change their behavior if the expected benefits or costs of an action change by enough. “Optimal decisions are made at the margin” means that most decisions are not “all or nothing” but involve doing a little more or a little less of an activity. Thus, the optimal decision is to continue any activity up to the point where the marginal benefit equals the marginal cost.

1.2 Scarcity is the situation in which unlimited wants exceed the limited resources available to fulfill those wants. Economics is the study of the choices consumers, business managers, and government officials make to attain their goals. Scarcity is central to economics because scarcity requires people to make choices about how to use their resources to best fulfill their wants.

Problems and Applications

1.3 As noted in the chapter, the economic incentive to banks is clear—it is less costly to put up with bank robberies than to take these additional security measures.

1.4 If you can charge \$3 more per ticket for a 3-D movie, then you must sell 25,000 tickets to 3-D movies to cover the additional \$75,000 equipment cost ($\$3 \text{ per ticket} \times 25,000 \text{ tickets} = \$75,000$). If you believe you will be able to sell at least 25,000 tickets for 3-D movies, then you will be able to cover your additional cost of equipment and the investment is a good idea. For any tickets sold beyond the first 25,000, the marginal benefit will be greater than the marginal cost and your profits will increase.

1.5 Jill is correct because profit equals revenue minus cost, so the additional revenue minus the additional cost will equal the additional profit.

1.6 Your friend is failing to think at the margin. It doesn't matter how much time has already been spent studying psychology. What matters is the marginal benefit to be received from studying psychology relative to the marginal cost, where cost is measured as the opportunity cost of lower grades in other subjects. If the course is required, that may raise the marginal benefit.

1.7 One possibility would be to compensate women only for the second or third child they have. Ideally we would like to know how many children the woman expects to have anyway and give a financial compensation for any child above this level. As this information is impossible to collect, compensation above the average number of children per family may be an alternative. That said, we may in this case be compensating women who would have lots of children anyway, and it is not clear that these are the women we want to target. One way of learning whether the incentive scheme is encouraging more births rather than just earlier births is to wait and see what happens to the birthrate over time. If it continues to increase, then the program encouraged more births, but if the birthrate falls back to previous levels, then the program only affected the timing of births.

1.8 A complete explanation for the connection between majoring in economics and success in business would involve many factors. But we can say that economics teaches us how to look at the trade-offs involved in every decision we make. Those who cannot understand the costs of an action and weigh them against its benefits are unlikely to make good decisions. Climbing the corporate or governmental ladder requires making a wider and wider array of such decisions.

1.2

The Economic Problem That Every Society Must Solve

Learning Objective: 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?

Review Questions

2.1 The three economic questions that every society must answer are: 1) What goods and services will be produced? 2) How will the goods and services be produced? 3) Who will receive the goods and

services? In a centrally planned economy, most of these decisions are made by the government. In a pure market economy, almost all of these decisions are made by the decentralized interaction of households and firms in markets. In a mixed economy, most economic decisions result from the interaction of buyers and sellers in markets, but government plays a significant role in the allocation of resources.

2.2 Productive efficiency occurs when a good or service is produced at the lowest possible cost. Allocative efficiency means that what is produced reflects consumer preferences—every good or service is produced up to the point at which the last unit provides a marginal benefit to consumers equal to the marginal cost of producing it.

2.3 Efficiency is concerned with producing the goods and services that people want at the lowest cost. Equity is “fairness,” a concept that can differ dramatically from person to person. Government policymakers often want to make economic outcomes “fairer,” but this often involves redistributing income from one group to another, which usually (but not always) hampers efficiency because it reduces incentives to produce and drives up production costs.

Problems and Applications

2.4 Yes, even Bill Gates faces scarcity because his wants exceed his resources. Gates has established a foundation with billions of dollars to spend on worthy causes like eradicating malaria and reducing homelessness. However, there are an unlimited number of worthy causes that Gates desires to fund, so even he faces scarcity. Secondly, even Gates has only twenty-four hours in a day, so he must make choices about how to spend his scarce time. Everyone faces scarcity, because human desires are virtually unlimited. Because the world’s resources are limited, the only way to not face scarcity would be to reduce your wants to be less than your resources.

2.5 Managers in a market system generally have a greater economic incentive to adopt better machinery and equipment whenever the benefits to their firms exceed the costs. Managers in centrally planned economies rarely are rewarded as directly for such decisions, and they rarely are given the authority to carefully weigh costs versus benefits in making decisions.

- 2.6**
- a. It is doubtful that centrally planned economies have been less efficient purely by chance. The underlying reason seems to be that centrally planned economies don’t provide as great incentives for hard work and innovation as market economies do. In addition, the people running centrally planned economies cannot make the most efficient decisions because they don’t have the information that is in the minds of all the decentralized decision makers in a market economy.
 - b. You might still prefer having a centrally planned economy if you considered it to be more equitable. (Also, you might prefer a centrally planned economy if you were in charge.)

2.7 If all of an economic system’s resources were devoted to health care provision, then there would be other important goods and services, such as food, housing, clothing, and education, that would not be provided. An economic system that provided its citizens state-of-the-art health care but so little food that most were on the verge of starvation, and no housing so that many were sleeping in streets and fields, and no schooling so most were illiterate, would generally be regarded as inefficient and treating the population unfairly by depriving them of such important goods and services. A market economy restricts access to health care, just as it restricts access to all goods and services, by charging a price at which less than an unlimited quantity of health care is demanded.

- 2.8**
- a. The groups that are most likely to get the tickets will be those for whom the expected marginal benefit of going to City Hall on Monday morning is greater than the expected marginal costs.

- These might include people who have a very low opportunity cost of traveling to City Hall and standing in line, such as people who don't have a job in the morning and those who live or work very close by. These might also include people who see a large benefit from going to get the tickets, such as die-hard NASCAR fans or professional ticket scalpers.
- b. The major opportunity cost of distributing the tickets this way is the cost to the people who attempt to get the tickets—the cost of travel to City Hall, the activities that cannot be done (such as earning money at work) while standing in line, and the costs to all those people who try to get tickets but don't get there soon enough. (There's also the cost of people blocking traffic in and around City Hall.)
 - c. This isn't an efficient way to distribute the tickets because it wastes so much time. Perhaps the most efficient way to distribute the tickets is to hand them out unannounced to people walking by—this would take only a few minutes. Alternatively, the city could sell them back to NASCAR and have them distribute the tickets. Auctioning off the tickets to the highest bidder would ensure that those who were willing to pay the highest price would obtain the tickets.
 - d. Equity is hard to define. Some people will see this as equitable, because only the deserving, true fan will put up with the hassle of getting the tickets. Some people might also argue that this system is equitable because the tickets are being distributed for free, making it possible for people with very low incomes to obtain one. Others will disagree, saying that people with a strong desire to obtain the tickets, but who are unable to be at City Hall at the designated time, would have no chance to get the tickets. Other people might argue that the system was not equitable because no money was raised for the taxpayers of the city, who deserve to get the benefits of selling the tickets because they fund the police department.

1.3

Economic Models

Learning Objective: Understand the role of models in economic analysis.

Review Questions

3.1 Economists use models for the same reason that any other scientist (and indeed everyone else) does—to make a complicated world simple enough that it can be understood and analyzed, so that questions about it can be usefully answered. Useful models will generate testable predictions. If these predictions are consistent with economic data, then the model isn't rejected and can be used to understand the economy. Testing models with data can be very difficult, however, because the economy is always changing, and it is virtually impossible to conduct controlled economic experiments.

3.2 In arriving at a useful economic model, these five steps are followed: 1) decide the assumptions to be used; 2) formulate a testable hypothesis; 3) use economic data to test the hypothesis; 4) revise the model if it fails to explain the economic data; and 5) retain the revised model to help answer similar economic questions.

3.3 Positive economic analysis concerns what is, that is, it deals with how the economy actually behaves. Normative economic analysis concerns what ought to be. Economics is mainly concerned with positive analysis—conceptualizing and measuring the costs and benefits of different courses of action. Decision makers (including voters and government officials) can use the trade-offs and costs and benefits identified by positive economic analysis in normatively deciding what course of action should be taken.

Problems and Applications

3.4 Economists assume that people are rational in the sense that their actions are intended to achieve their goals. This does not mean that economists assume everyone is a genius or always makes the “right” decision in every circumstance. It does mean that economists assume that the actions of consumers and businesses reflect their attempts to achieve their goals.

3.5 The model should be revised in light of its failure to explain or predict real world events.

3.6 The problem with Dr. Strangelove’s theory is that it cannot be tested unless we can devise a way to measure the emission of these subatomic particles, which seems to be impossible because they don’t exist in our universe. Because we cannot test the model’s predictions, it is not very useful to us—even though it might be true, we have no way of knowing.

3.7 It would be helpful to know what impact immigration has had on the wages of skilled workers, what effect the limitations on immigrant labor have on the costs of U.S. firms, and how greater immigration restrictions will affect foreign student enrollment in U.S. colleges. Even if these statistics were available, they would not likely address the normative issues of the debate. Normative issues such as disagreeing with unlimited immigration for political or cultural reasons, or disagreeing with government interference in the marketplace for philosophical reasons, are issues that cannot be fully addressed with statistics.

- 3.8.**
- a. The number of jobs in the United States that require technical training continues to increase, and the number of U.S. citizens with the needed technical training for these jobs is not large enough to fill the job openings.
 - b. Tightening the restrictions on immigration on foreign labor could impact the economy in several ways. Those opposed to the increased restrictions argue that added restrictions will further hinder the ability of U.S. firms to compete with foreign firms and may result in a decrease in the number of foreign students enrolling in U.S. colleges and universities. Those in favor of added restrictions argue that U.S. citizens will have a better opportunity to obtain employment, and this will help stimulate the economy during the recession.

3.9. a. and c. are positive statements; b. and d. are normative statements.

- 3.10**
- a. The law might protect consumers because financial advisors are generally better trained and more knowledgeable about financial markets than are non-financial advisors. Applying this law to include financial advice given via the Internet would help protect consumers from possible Internet financial scams.
 - b. The law clearly protects financial advisors by reducing the competition facing them and allowing them to increase their fees. The gains to consumers may be small because consumers are often wise enough to know when going to a licensed financial advisor is their best decision and when relying on someone with less training is acceptable.
 - c. Answers will vary, but people will tend to favor the law if they have financial ties to licensed financial advisors, if they expect the advice from these non-licensed advisors will be incompetent, or if they have had previous bad experiences with non-licensed financial advisors. People will tend to oppose the law if they think that consumers are in a good position to decide for themselves who is offering good advice at a good price.

1.4

Microeconomics and Macroeconomics

Learning Objective: Distinguish between microeconomics and macroeconomics.

Review Question

4.1 Microeconomics is the study of how households and firms make choices, how they interact in specific markets, and how the government influences their choices. “Micro” means small, and microeconomics deals with individual decision makers. Macroeconomics is the study of the economy as a whole. “Macro” means large, and macroeconomics deals with economy-wide outcomes, such as the inflation rate, the unemployment rate, and the economic growth rate.

Problems and Applications

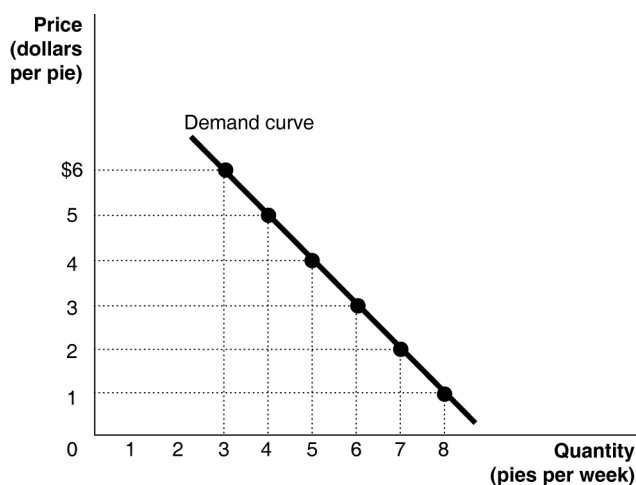
4.2 a. and d. are microeconomic questions; b. and c. are macroeconomic questions.

4.3 I disagree with the assertion. Microeconomics deals with individual decision makers, so the unemployment rate in any one city would be an issue for the economy of the entire city and not an individual. Macroeconomics deals with economy-wide outcomes, so the impact of a tax on cigarettes on teen smoking would be too specific to be a macro concept.

SOLUTIONS TO CHAPTER 1 APPENDIX**1A.1**

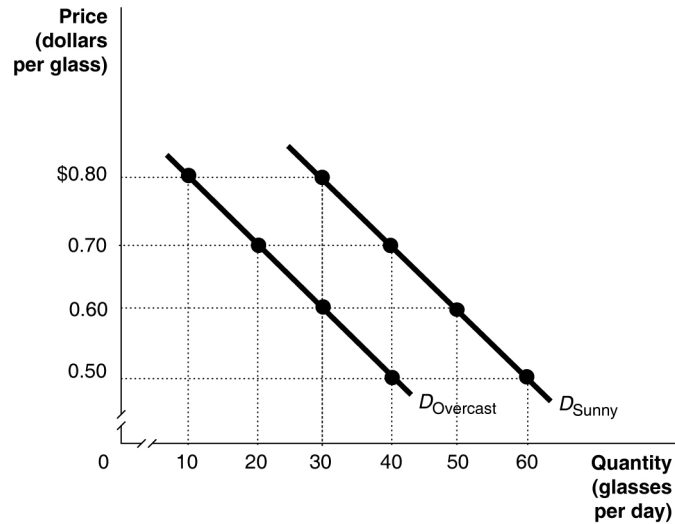
a. The relationship is negative because as price decreases, the quantity of pies purchased increases.

b.



c. The slope = -1 .

1A.2



1A.3

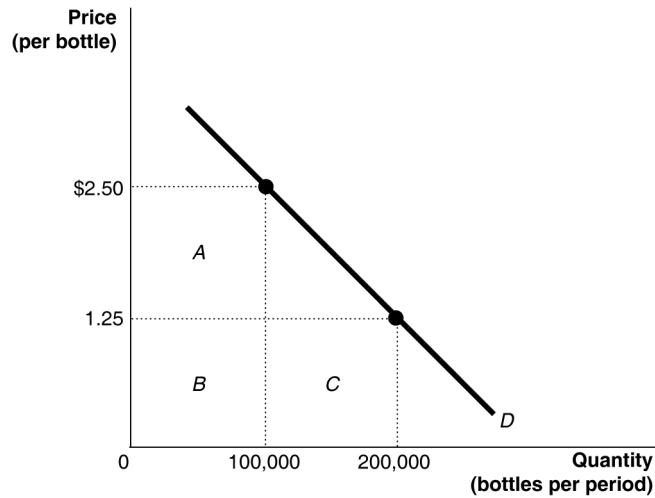
Period	Percentage Change
2001 to 2002	0%
2002 to 2003	$[(6.7 - 7.0)/7.0] \times 100 = -4.3\%$
2003 to 2004	$[(6.8 - 6.7)/6.7] \times 100 = 1.5\%$
2004 to 2005	0%
2005 to 2006	$[(6.6 - 6.8)/6.8] \times 100 = -2.9\%$
2006 to 2007	0%
2007 to 2008	$[(5.4 - 6.6)/6.6] \times 100 = -18.18\%$

Sales fell at the fastest rate between 2007 and 2008.

1A.4 $[(\$5,189 \text{ billion} - \$5,292 \text{ billion})/\$5,292 \text{ billion}] \times 100 = -1.9\%$. The percentage change in real GDP from one year to the next is the economy's growth rate.

1A.5

a.



- b. At \$2.50, the total revenue equals rectangles $A + B = \$250,000$ (because $\$2.50 \times 100,000 = \$250,000$). At \$1.25, the total revenue equals rectangles $B + C = \$250,000$ (because $\$1.25 \times 200,000 = \$250,000$).

1A.6 The triangle's area = $0.5 \times 60,000 \times \$0.75 = \$22,500$.

1A.7 The slope is calculated using the formula:

$$\text{Slope} = \frac{\text{Change in value on the vertical axis}}{\text{Change in value on the horizontal axis}} = \frac{\Delta y}{\Delta x} = \frac{\text{Rise}}{\text{Run}}.$$

At point A: rise = $300 - 175 = 125$, run = $7 - 5 = 2$. Therefore, the slope = $125/2 = 62.5$.

At point B: rise = $900 - 700 = 200$, run = $14 - 12 = 2$. Therefore, the slope = $200/2 = 100$.

CHAPTER

**2 | Trade-offs,
Comparative Advantage,
and the Market System*****Brief Chapter Summary and Learning Objectives*****2.1 Production Possibilities Frontiers and Opportunity Costs (pages 38–44)**

Use a production possibilities frontier to analyze opportunity costs and trade-offs.

- The economic resources nations have to produce goods and services are scarce. Decision-makers face trade-offs as the result of scarcity.
- The model of the production possibilities frontier is used to analyze the opportunity costs and trade-offs that individuals, firms, or countries face.

2.2 Comparative Advantage and Trade (pages 44–49)

Understand comparative advantage and explain how it is the basis for trade.

- Comparative advantage is the ability of an individual, firm, or country to produce a good or service at a lower opportunity cost than other producers.

2.3 The Market System (pages 49–55)

Explain the basic idea of how a market system works.

- Markets enable buyers and sellers of goods and services to come together to trade.
- Entrepreneurs, those who own and operate businesses, produce goods and services that consumers want and decide how these goods and services should be produced to yield the most profit.
- It is essential that government protects rights to private property in order for a market system to work well.

Key Terms

Absolute advantage, p. 46. The ability of an individual, a firm, or a country to produce more of a good or service than competitors, using the same amount of resources.

Circular-flow diagram, p. 50. A model that illustrates how participants in markets are linked.

Comparative advantage, p. 47. The ability of an individual, a firm, or a country to produce a good or service at a lower opportunity cost than competitors.

Economic growth, p. 44. The ability of the economy to produce increasing quantities of goods and services.