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Economics

Seventh Edition

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Columbia University

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Lehigh University

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

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

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FLEXIBILITY **CHART**

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

Core	Optional	Policy
Chapter 1: Economics: Foundations and Models	**Chapter 1 Appendix:** Using Graphs and Formulas	
Chapter 2: Trade-offs, Comparative Advantage, and the Market System		
Chapter 3: Where Prices Come From: The Interaction of Demand and Supply		
	Chapter 4 Appendix: Quantitative Demand and Supply Analysis	**Chapter 4:** Economic Efficiency, Government Price Setting, and Taxes
		Chapter 5: Externalities, Environmental Policy, and Public Goods
Chapter 6: Elasticity: The Responsiveness of Demand and Supply		
		Chapter 7: The Economics of Health Care
	Chapter 8: Firms, the Stock Market, and Corporate Governance	
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Chapter 9: Comparative Advantage and the Gains from International Trade		
	Chapter 10: Consumer Choice and Behavioral Economics	
	Chapter 10 Appendix: Using Indifference Curves and Budget Lines to Understand Consumer Behavior	
Chapter 11: Technology, Production, and Costs	**Chapter 11 Appendix:** Using Isoquants and Isocost Lines to Understand Production and Cost	
Chapter 12: Firms in Perfectly Competitive Markets		
Chapter 13: Monopolistic Competition: The Competitive Model in a More Realistic Setting		
Chapter 14: Oligopoly: Firms in Less Competitive Markets		
Chapter 15: Monopoly and Antitrust Policy		
	Chapter 16: Pricing Strategy	

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Core	Optional	Policy
Chapter 17: The Markets for Labor and Other Factors of Production		
		Chapter 18: Public Choice, Taxes, and the Distribution of Income
Chapter 19: GDP: Measuring Total Production and Income		
Chapter 20: Unemployment and Inflation		
Chapter 21: Economic Growth, the Financial System, and Business Cycles		
Chapter 22: Long-Run Economic Growth: Sources and Policies		
	Chapter 23: Aggregate Expenditure and Output in the Short Run	
	Chapter 23 Appendix: The Algebra of Macroeconomic Equilibrium	
Chapter 24: Aggregate Demand and Aggregate Supply Analysis		
	Chapter 24 Appendix: Macroeconomic Schools of Thought	
Chapter 25: Money, Banks, and the Federal Reserve System		
		Chapter 26: Monetary Policy
	Chapter 27 Appendix: A Closer Look at the Multiplier	**Chapter 27:** Fiscal Policy
		Chapter 28: Inflation, Unemployment, and Federal Reserve Policy
	Chapter 29: Macroeconomics in an Open Economy	
	Chapter 30: The International Financial System	
	Chapter 30 Appendix: The Gold Standard and the Bretton Woods System	

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PREFACE

Our approach in this new edition remains what it was in the first edition, published nearly 15 years ago: to provide students and instructors an economics text that delivers complete economics coverage with many real-world business examples. Our goal has been to teach economics in a "widget-free" way by using real-world business and policy examples. We are gratified by the enthusiastic response from students and instructors who have used the first six editions of this book and who have made it a best-selling economics textbook.

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

New to This Edition

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

Overview of Changes

- All the chapter openers feature either new companies or have updated information. Students can visit MyLab Economics to watch a brief video that summarizes the key points of each chapter opener.
- Chapters 1–4, include new *An Inside Look* features to help students apply economic thinking to current events and policy debates as they are presented in news articles. Additional news articles and analyses appear weekly on MyLab Economics.
- There are 20 new *Apply the Concept* features (formerly titled *Making the Connection*) to help students tie economic concepts to current events and policy issues. The *Apply the Concept* features that were retained from the previous edition are updated. Students can visit MyLab Economics to watch more than 100 videos in which we summarize the key points in each feature. Related assessment accompanies each video, so students can test their understanding before moving on to a new section of the chapter.
- There are 5 new *Solved Problems* and 12 heavily revised *Solved Problems*. This feature helps students break down and answer economic problems step by step. There are additional Interactive *Solved Problems* on MyLab Economics, where students can receive feedback and tutorial help.
- There is a new category of end-of-chapter material titled *Critical Thinking Exercises*. We were motivated to add this new category of exercises because many instructors have told us that students need help building skills in the following areas: (1) analyzing and interpreting information; (2) applying reasoning and logic to new or unfamiliar ideas and situations; (3) examining ideas and concepts from multiple perspectives; and (4) clearly communicating their findings in a brief paper or class presentation. Students can complete these exercises on MyLab Economics and receive feedback and tutorial help.
- All the figures and tables are updated with the latest data available. Video animations of all the numbered figures and select tables are located on MyLab Economics. Graded practice exercises are included with these animations.

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- We have replaced or updated many of the end-of-chapter *Problems and Applications*. In most chapters, one or two problems include graphs or tables for students to analyze. Select chapters have a category titled *Real-Time Data Exercises*, and we updated some of these exercises. Students can complete these exercises on MyLab Economics and receive feedback and tutorial help.

New Content and Features by Chapter

Here is a description of key changes by chapter.

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

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

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

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

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

Chapter 6, "Elasticity: The Responsiveness of Demand and Supply," opens with a new discussion of how to evaluate the success of the soda tax enacted by several cities, including San Francisco and Philadelphia, in improving people's health and increasing tax revenue.

Chapter 7, "The Economics of Health Care," opens with a new discussion of how insurance companies are dealing with the effects of the Patient Protection and Affordable Care Act of 2010. There is also a discussion of the 2017 debate in Congress over whether that act should be extensively revised.

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

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

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

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

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

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

Chapter 14, "Oligopoly: Firms in Less Competitive Markets," opens with an updated discussion of competition in the music streaming business. A new *Apply the Concept* discusses how some bakeries have tried to use government regulations to eliminate competition from home bakers. A new *Solved Problem 14.2* uses game theory to analyze why Spotify and Apple Music offer student discounts.

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

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

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

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

Chapter 19, "GDP: Measuring Total Production and Income," opens with an updated discussion of how Ford and other car companies deal with the business cycle. A new *Apply the Concept* discusses an innovative Web site created by Steve Ballmer, former CEO of Microsoft, that uses the preamble to the U.S. Constitution as a framework for reorganizing macroeconomic data.

Chapter 20, "Unemployment and Inflation," opens with a new discussion of Boeing's decision in 2017 to lay off workers, despite a growing U.S. economy. The chapter includes an updated analysis of the reasons for the decline in labor force participation among prime-aged males. A new *Apply the Concept* discusses how to characterize the unemployment resulting from Boeing's layoffs.

Chapter 21, "Economic Growth, the Financial System, and Business Cycles," opens with a new discussion of whether peak oil demand threatens the long-run growth of Chevron Corporation.

Chapter 22, "Long-Run Economic Growth: Sources and Policies," begins with a new opener that uses Wisconsin-based Rexnord Corporation's decision to relocate some production to Mexico to frame the discussion of whether that country is capable of increasing its growth rate.

Chapter 23, "Aggregate Expenditure and Output in the Short Run," contains thoroughly updated graphs and tables.

Chapter 24, "Aggregate Demand and Aggregate Supply Analysis," opens with a new discussion of the effect of the business cycle on KB Home and other home builders.

Chapter 25, "Money, Banks, and the Federal Reserve System," opens with a new discussion of why many people in India are using Paytm, an app that allows users to make payments at retail stores or online. A new *Apply the Concept* continues the analysis of this topic by discussing why some businesses in the United States and Europe no longer accept cash.

Chapter 26, "Monetary Policy," opens with an updated account of why interest rates on some mortgages in Europe are negative. An important new section describes the policy tools the Federal Reserve uses to manage its target for the federal funds rate, now that banks hold $2 trillion in excess reserves.

Chapter 27, "Fiscal Policy," opens with a new discussion of the effects of federal government infrastructure spending on Vulcan Materials and other construction firms, as well as on the wider economy. A centerpiece of President Trump's economic plan is using changes to the federal tax code, as well as other policies, to increase the annual growth rate of real GDP to 3 percent. We discuss what would be required

to achieve this goal in a new section, "Explaining Long-Run Increases in Real GDP," and in a new *Apply the Concept*. New Table 27.4 summarizes how the Congressional Budget Office forecast real GDP growth for 2017–2027.

Chapter 28, "Inflation, Unemployment, and Federal Reserve Policy," opens with a new discussion of how the Fed's attempts to bring the economy in for a soft landing will affect General Motors, Toll Brothers, and other firms.

Chapter 29, "Macroeconomics in an Open Economy," opens with a new discussion of the effect of fluctuations in exchange rates on Amazon's profit. New *Solved Problem 29.2* analyzes how fluctuations in the value of the yen affect Toyota, and an updated *Apply the Concept* considers how the Trump administration has reacted to fluctuations in the value of the dollar.

Chapter 30, "The International Financial System," contains updated coverage of the struggles of the euro and the pressure the Trump administration has faced to label China a currency manipulator.

To make room for the new content described earlier, we have cut approximately 20 *Apply the Concepts* and 5 *Solved Problems* from the previous edition and transferred some of them to the book's *Instructor's Manual*, where they are available for instructors who wish to continue using them.

Solving Teaching and Learning Challenges

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

The Foundation:
Contextual Learning and Modern Organization

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

Microeconomics

We are convinced that students learn to apply economic principles best if they are taught in a familiar context. Whether they become artists, social workers, engineers, bankers, or government employees, students benefit from understanding economics. We therefore use many diverse real-world business and policy examples to illustrate economic concepts. Here are a few highlights of our approach to microeconomics:

- **A strong set of introductory chapters.** The introductory chapters provide students with a solid foundation in the basics. We emphasize the key ideas of marginal analysis

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

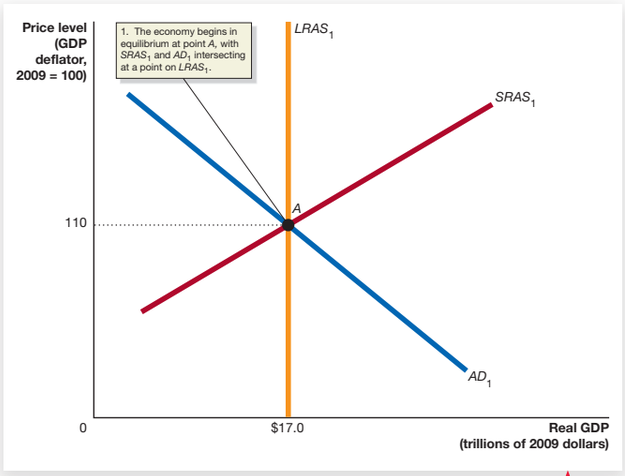
- **Early coverage of policy issues.** To expose students to policy issues early in the course, we discuss trade policy in Chapter 1, "Economics: Foundations and Models"; rent control and the minimum wage in Chapter 4, "Economic Efficiency, Government Price Setting, and Taxes"; air pollution, global warming, and public goods in Chapter 5, "Externalities, Environmental Policy, and Public Goods"; government policy toward soda and other sweetened beverages in Chapter 6, "Elasticity: The Responsiveness of Demand and Supply"; and health care policy in Chapter 7, "The Economics of Health Care."
- **Complete coverage of monopolistic competition.** We devote a full chapter, Chapter 13, "Monopolistic Competition: The Competitive Model in a More Realistic Setting," to monopolistic competition prior to covering oligopoly and monopoly in Chapter 14, "Oligopoly: Firms in Less Competitive Markets," and Chapter 15, "Monopoly and Antitrust Policy." Although many instructors cover monopolistic competition very briefly or dispense with it entirely, we think it is an overlooked tool for reinforcing the basic message of how markets work in a context that is much more familiar to students than are the agricultural examples that dominate discussions of perfect competition. We use the monopolistic competition model to introduce the downward-sloping demand curve material usually introduced in a monopoly chapter. This approach helps students grasp the important point that nearly all firms—not just monopolies—face downward-sloping demand curves. Covering monopolistic competition directly after perfect competition also allows for early discussion of topics such as brand management and sources of competitive success. Nevertheless, we wrote the chapter so that instructors who prefer to cover monopoly (Chapter 15, "Monopoly and Antitrust Policy") directly after perfect competition (Chapter 12, "Firms in Perfectly Competitive Markets") can do so without loss of continuity.
- **Extensive, realistic game theory coverage.** In Chapter 14, "Oligopoly: Firms in Less Competitive Markets," we use game theory to analyze competition among oligopolists. Game theory helps students understand how companies with market power make strategic decisions in many competitive situations. We use familiar companies such as Apple, Amazon, Dell, Spotify, and Walmart in our game theory applications.
- **Unique coverage of pricing strategy.** In Chapter 16, "Pricing Strategy," we explore how firms use pricing strategies to increase profits. Students encounter pricing strategies everywhere—when they buy a movie ticket, book a flight for spring break, or research book prices online. We use these relevant, familiar examples to illustrate how companies use strategies such as price discrimination, cost-plus pricing, and two-part tariffs.

Macroeconomics

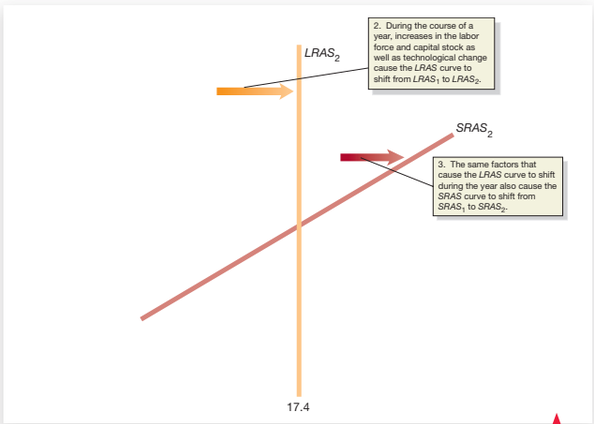
Students come to study macroeconomics with a strong interest in understanding events and developments in the economy. We capture that interest and develop students' economic intuition and understanding by presenting macroeconomics in a way that is modern and based in the real world of business and economic policy. And we believe

we achieve this presentation without making the analysis more difficult. We avoid the recent trend of using simplified versions of intermediate models, which are often more detailed and complex than what students need to understand the basic macroeconomic issues. Instead, we use a more realistic version of the familiar aggregate demand and aggregate supply model to analyze short-run fluctuations and monetary and fiscal policy. We also avoid the "dueling schools of thought" approach often used to teach macroeconomics at the principles level. We emphasize the many areas of macroeconomics where most economists agree. And we present throughout real business and policy situations to develop students' intuition. Here are a few highlights of our approach to macroeconomics:

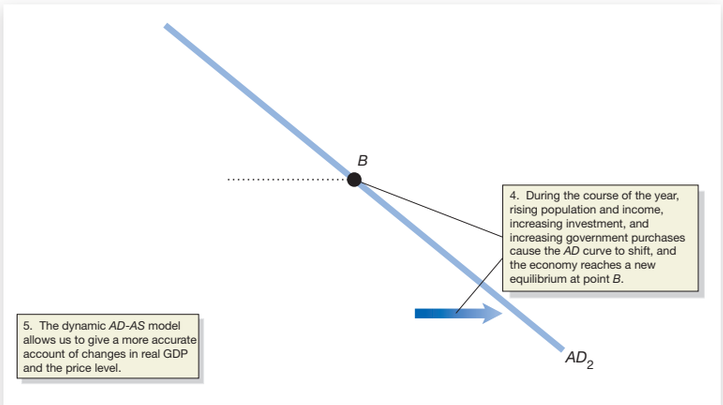
- **A careful discussion of macro statistics.** Many students pay some attention to the financial news and know that the release of statistics by federal agencies can cause movements in stock and bond prices. A background in macroeconomic statistics helps clarify some of the policy issues encountered in later chapters. In Chapter 19, "GDP: Measuring Total Production and Income," and Chapter 20, "Unemployment and Inflation," we provide students with an understanding of the uses and potential shortcomings of the key macroeconomic statistics, without getting bogged down in the minutiae of how the statistics are constructed. So, for instance, we discuss the important differences between the payroll survey and the household survey for understanding conditions in the labor market. We explain why financial markets react more strongly to news from the payroll survey. We provide a discussion of the employment–population ratio, which is not covered in some other texts but which many economists regard as a key measure of labor market performance.
- **Early coverage of long-run topics.** We place key macroeconomic issues in their long-run context in Chapter 21, "Economic Growth, the Financial System, and Business Cycles," and Chapter 22, "Long-Run Economic Growth: Sources and Policies." Chapter 21 puts the business cycle in the context of underlying long-run growth and discusses what actually happens during the phases of the business cycle. We believe this material is important if students are to have the understanding of business cycles they will need to interpret economic events; this material is often discussed only briefly or omitted entirely in other books. We know that many instructors prefer to have a short-run orientation to their macro courses, with a strong emphasis on policy. Accordingly, we have structured Chapter 21 so that its discussion of long-run growth is sufficient for instructors who want to move quickly to short-run analysis. Chapter 22 uses a simple neoclassical growth model to explain important growth issues. We apply the model to topics such as the decline of the Soviet economy, the long-run prospects for growth in China, the implications of the slowdown in productivity growth for the U.S. economy, and the failure of many developing countries to sustain high growth rates. *And* we challenge students with the discussion "Why Isn't the Whole World Rich?"
- **A dynamic model of aggregate demand and aggregate supply.** We take a fresh approach to the standard aggregate demand and aggregate supply (*AD–AS*) model. We realize there is no good, simple alternative to using the *AD–AS* model when explaining movements in the price level and in real GDP. But we know that more instructors are dissatisfied with the *AD–AS* model than with any other aspect of the macro principles course. The key problem, of course, is that *AD–AS* is a static model that attempts to account for dynamic changes in real GDP and the price level. Our approach retains the basics of the *AD–AS* model but makes it more accurate and useful by making it more dynamic. We emphasize two points: (1) Changes in the position of the short-run (upward-sloping) aggregate supply curve depend mainly on the state of expectations of the inflation rate; and (2) the existence of growth in the economy means that the long-run (vertical) aggregate supply curve shifts to the right every year. This "dynamic" *AD–AS* model provides students with a more accurate understanding of the causes and consequences of fluctuations in real GDP and the price level. Chapter 24, "Aggregate



The first acetate overlay adds the shifts in the long- and short-run aggregate supply curves.



The second acetate overlay adds the shifts in the aggregate demand curve to complete the dynamic model.



Demand and Aggregate Supply Analysis," 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 844 and reproduced on the left). 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. We introduce this model in Chapter 24 and use it to discuss monetary policy in Chapter 26, "Monetary Policy," and fiscal policy in Chapter 27, "Fiscal Policy." The material on dynamic *AD–AS* is presented in self-contained sections in Chapters 24, 26, and 27, so instructors may safely omit the sections on the dynamic *AD–AS* model without any loss in continuity to the discussion of macroeconomic theory and policy.

- **Extensive coverage of monetary policy.** Because of the central role monetary policy plays in the economy and in students' curiosity about business and financial news, we devote two chapters—Chapter 26, "Monetary Policy," and Chapter 28, "Inflation, Unemployment, and Federal Reserve Policy"—to the topic. We emphasize the issues involved in the Fed's choice of monetary policy targets, and we include coverage of the Taylor rule. We also cover the new Fed's new policy tools and the debate over whether the Fed's policies during and after the 2007–2009 financial crisis were consistent with its mandate under the Federal Reserve Act.
- **Coverage of both the demand-side and supply-side effects of fiscal policy.** Our discussion of fiscal policy in Chapter 27, "Fiscal Policy," carefully distinguishes between automatic stabilizers and discretionary fiscal policy. We also provide significant coverage of the supply-side effects of fiscal policy. A new section discusses the requirements for the Trump administration to hit its goal of restoring the long-run annual growth rate of real GDP to 3 percent.
- **A self-contained but thorough discussion of the Keynesian income–expenditure approach.** The Keynesian income–expenditure approach (the "45°-line diagram," or "Keynesian cross") is useful for introducing students to the short-run relationship between spending and production. Many instructors, however, prefer to omit this material. Therefore, we use the 45°-line diagram only in Chapter 23, "Aggregate Expenditure and Output in the Short Run." The discussions of monetary and fiscal policy in Chapter 26, "Monetary Policy," and Chapter 27, "Fiscal Policy," respectively, use only the *AD–AS* model, making it possible to omit Chapter 23.

- **Extensive international coverage.** We include three chapters devoted to international topics: Chapter 9, "Comparative Advantage and the Gains from International Trade," Chapter 29, "Macroeconomics in an Open Economy," and Chapter 30, "The International Financial System." Having a good understanding of the international trading and financial systems is essential to understanding the macroeconomy and to satisfying students' curiosity about the economic world around them. In addition to the material in our three international chapters, we weave international comparisons into the narratives of several other chapters, including our discussion of labor market policies in Chapter 28, "Inflation, Unemployment, and Federal Reserve Policy," and central banking in Chapter 25, "Money, Banks, and the Federal Reserve System."
- **Flexible chapter organization.** Because we realize that there are a variety of approaches to teaching principles of macroeconomics, we have structured our chapters for maximum flexibility. For example, our discussion of long-run economic growth in Chapter 21, "Economic Growth, the Financial System, and Business Cycles," makes it possible for instructors to omit the more thorough discussion of these issues in Chapter 22, "Long-Run Economic Growth: Sources and Policies." Our discussion of the Keynesian 45°-line diagram is confined to Chapter 23, "Aggregate Expenditure and Output in the Short Run," so that instructors who do not use this approach can proceed directly to aggregate demand and aggregate supply analysis in Chapter 24, "Aggregate Demand and Aggregate Supply Analysis." While we devote two chapters to monetary policy, the first of these—Chapter 26, "Monetary Policy"—is a self-contained discussion, so instructors may safely omit the material in Chapter 28, "Inflation, Unemployment, and Federal Reserve Policy," if they choose to. Finally, instructors may choose to omit all three of the international chapters (Chapter 9, "Comparative Advantage and the Gains from International Trade," Chapter 29, "Macroeconomics in an Open Economy," and Chapter 30, "The International Financial System"), cover just Chapter 9 on international trade, cover just Chapter 29, or cover Chapters 29 and 30 while omitting Chapter 9. Please refer to the flexibility chart shown earlier on pages xxvi–xxvii to help select the chapters and order best suited to your classroom needs.

MyLab Economics

OVERVIEW

Reach every student by pairing this text with MyLab Economics

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

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FEATURES IN THE BOOK AND SUPPORTING RESOURCES ON MYLAB ECONOMICS

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

Business Cases and An Inside Look *News Articles*

Each chapter-opening case provides a real-world context for learning, sparks students' interest in economics, and helps unify the chapter. The case describes an actual company facing a real situation. The company is integrated in the narrative, graphs, and pedagogical features of the chapter. Some of the chapter openers focus on the role of entrepreneurs in developing new products and bringing them to market. For example, Chapter 2 features Elon Musk of Tesla Motors; Chapter 24 features KB Home founders Donald Kaufman and Eli Broad; Chapter 25 features Paytm founder Vijay Shekhar Sharma; and Chapter 29 features Jeff Bezos of Amazon.

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

3 Where Prices Come From: The Interaction of Demand and Supply

How Smart Is Your Water?

What does a firm do when its primary product starts to fall out of fashion? The Coca-Cola Company and PepsiCo, Inc., have faced that question in recent years. Between 2004 and 2016, measured by volume, sales in the United States of carbonated beverages like Coke and Pepsi declined by more than 25 percent, while sales of bottled water increased by more than 50 percent. In 2016, sales of bottled water were greater than sales of carbonated beverages for the first time. This change resulted from a shift in consumer tastes as many people, particularly millennials, increased their demand for healthier beverages that don't contain sugar or artificial sweeteners.

In 1994, Pepsi responded to increased consumer demand for bottled water by introducing Aquafina water, and in 1999, Coke responded by introducing Dasani water. Neither company, though, had found selling bottled water to be as profitable as selling soda. As a result of decades of advertising, Coke and Pepsi are two of the most recognizable brand names in the world. The companies also have networks of bottling plants and commitments from supermarkets to provide them with extensive shelf space. Other companies have had trouble competing with Coke and Pepsi, which together account for nearly 75 percent of the market for carbonated beverages. The Aquafina and Dasani brands are not nearly as well known, however, so other companies have been better able to compete in the bottled water market, limiting Coke and Pepsi to less than 20 percent of that market.

By 2017, Coke and Pepsi were attempting to increase their profits in the bottled water market by introducing premium water or smart water brands. With regular bottled water, firms filter tap water or spring water to remove impurities. With premium water, like Pepsi's LIFEWTR and Coke's smartwater, firms also add ingredients, typically electrolytes. Although many nutritionists are skeptical that premium water is any better for you than regular bottled water, demand for premium bottled water has been increasing rapidly. Both Coke and Pepsi have been able to charge higher prices for their premium water brands than they do for their carbonated beverages. But the firms were facing determined competition from Nestlé's Perrier brand and Danone's Evian brand, among many others.

Although premium water was a hot product in 2017, there are no guarantees in a market system. Will Coke and Pepsi and their competitors be able to continue charging higher prices for premium water than for regular bottled water, or will competition force down prices and make selling premium bottled water no more profitable than selling regular bottled water? Although competition is not always good news for firms trying to sell products, it is great news for consumers because it increases the choice of available products and lowers the prices consumers pay for those products.

AN INSIDE LOOK on **page 98** discusses how McDonald's has responded to shifts in consumer demand by serving breakfast all day, allowing customers to order food online, and offering home delivery.

Sources: Jennifer Maloney, "Coca-Cola Needs to Be More Than Just Coke, Its Next Chief Says," *Wall Street Journal*, February 23, 2017; Jennifer Maloney, "PepsiCo Gives Its 'Premium' Water a Super Bowl Push," *Wall Street Journal*, January 24, 2017; and Felix Solomon, "Coca-Cola and Pepsi Now Have Something Else in Common," fortune.com, December 7, 2016.

Andrew Taft/Strategy/Getty Images

Chapter Outline & Learning Objectives

3.1 The Demand Side of the Market, page 74
List and describe the variables that influence demand.

3.2 The Supply Side of the Market, page 82
List and describe the variables that influence supply.

3.3 Market Equilibrium: Putting Demand and Supply Together, page 86
Use a graph to illustrate market equilibrium.

3.4 The Effect of Demand and Supply Shifts on Equilibrium, page 90
Use demand and supply graphs to predict changes in prices and quantities.

Economics in Your Life & Career

Can You Forecast the Future Demand for Premium Bottled Water?

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

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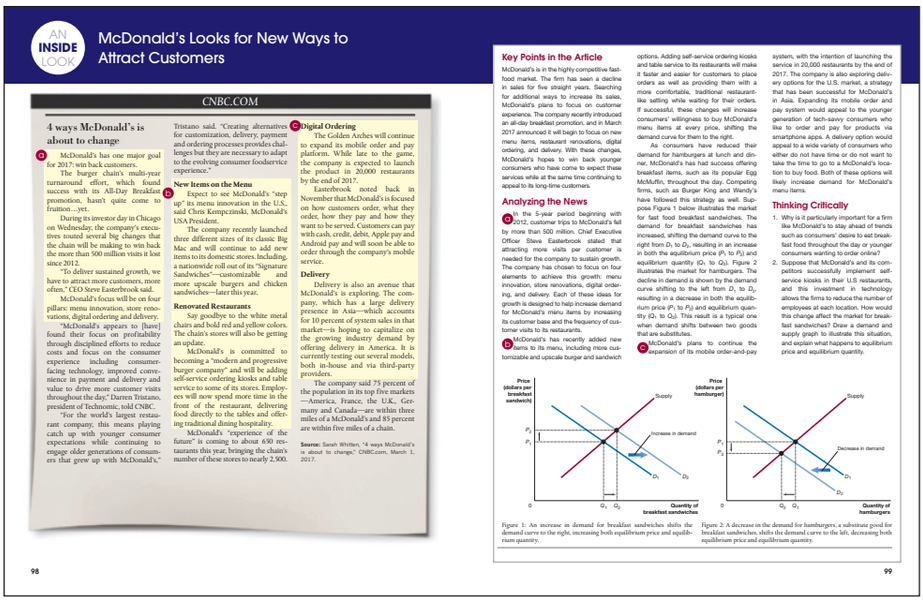
An Inside Look is a two-page feature that shows students how to apply the concepts from the chapter to the analysis of a news article. The feature appears at the end of Chapters 1–4. *An Inside Look* presents an excerpt from an article, analysis of the article, a graph(s), and critical thinking questions.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



AN INSIDE LOOK

McDonald's Looks for New Ways to Attract Customers

CNBC.COM

4 ways McDonald's is about to change

McDonald's has one major goal for 2017: win back customers.

The burger chain's multi-year turnaround effort, which found success with its All-Day Breakfast promotion, hasn't quite come to fruition…yet.

During its investor day in Chicago on Wednesday, the company's executives touted several big changes that the chain will be making to win back the more than 500 million visits it lost since 2012.

"To deliver sustained growth, we have to attract more customers, more often," CEO Steve Easterbrook said.

McDonald's focus will be on four pillars: menu innovation, store renovations, digital ordering and delivery.

"McDonald's appears to [have] found their focus on profitability through disciplined efforts to reduce costs and focus on the consumer experience including consumer-facing technology, improved convenience in payment and delivery and value to drive more customer visits throughout the day," Darren Tristano, president of Technomic, told CNBC.

"For the world's largest restaurant company, this means playing catch up with younger consumer expectations while continuing to engage older generations of consumers that grew up with McDonald's," Tristano said. "Creating alternatives for customization, delivery, payment and ordering processes provides challenges but they are necessary to adapt to the evolving consumer foodservice experience."

New Items on the Menu

Expect to see McDonald's "step up" its menu innovation in the U.S., said Chris Kempczinski, McDonald's USA President.

The company recently launched three different sizes of its classic Big Mac and will continue to add new items to its domestic stores. Including, a nationwide roll out of its "Signature Sandwiches"—customizable and more upscale burgers and chicken sandwiches—later this year.

Renovated Restaurants

Say goodbye to the white metal chairs and bold red and yellow colors. The chain's stores will also be getting an update.

McDonald's is committed to becoming a "modern and progressive burger company" and will be adding self-service ordering kiosks and table service to some of its stores. Employees will now spend more time in the front of the restaurant, delivering food directly to the tables and offering traditional dining hospitality.

McDonald's "experience of the future" is coming to about 650 restaurants this year, bringing the chain's number of these stores to nearly 2,500.

Digital Ordering

The Golden Arches will continue to expand its mobile order and pay platform. While late to the game, the company is expected to launch the product in 20,000 restaurants by the end of 2017.

Easterbrook noted back in November that McDonald's is focused on how customers order, what they order, how they pay and how they want to be served. Customers can pay with cash, credit, debit, Apple pay and Android pay and will soon be able to order through the company's mobile service.

Delivery

Delivery is also an avenue that McDonald's is exploring. The company, which has a large delivery presence in Asia—which accounts for 10 percent of system sales in that market—is hoping to capitalize on the growing industry demand by offering delivery in America. It is currently testing out several models, both in-house and via third-party providers.

The company said 75 percent of the population in its top five markets —America, France, the U.K., Germany and Canada—are within three miles of a McDonald's and 85 percent are within five miles of a chain.

Source: Sarah Whitten, "4 ways McDonald's is about to change," CNBC.com, March 1, 2017.

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Key Points in the Article

McDonald's is in the highly competitive fast-food market. The firm has seen a decline in sales for five straight years. Searching for additional ways to increase its sales, McDonald's plans to focus on customer experience. The company recently introduced an all-day breakfast promotion, and in March 2017 announced it will begin to focus on new menu items, restaurant renovations, digital ordering, and delivery. With these changes, McDonald's hopes to win back younger consumers who have come to expect these services while at the same time continuing to appeal to its long-time customers.

Analyzing the News

In the 5-year period beginning with 2012, customer trips to McDonald's fell by more than 500 million. Chief Executive Officer Steve Easterbrook stated that attracting more visits per customer is needed for the company to sustain growth. The company has chosen to focus on four elements to achieve this growth: menu innovation, store renovations, digital ordering, and delivery. Each of these ideas for growth is designed to help increase demand for McDonald's menu items by increasing its customer base and the frequency of customer visits to its restaurants.

McDonald's has recently added new items to its menu, including more customizable and upscale burger and sandwich options. Adding self-service ordering kiosks and table service to its restaurants will make it faster and easier for customers to place orders as well as providing them with a more comfortable, traditional restaurant-like setting while waiting for their orders. If successful, these changes will increase consumers' willingness to buy McDonald's menu items at every price, shifting the demand curve for them to the right.

As consumers have reduced their demand for hamburgers at lunch and dinner, McDonald's has had success offering breakfast items, such as its popular Egg McMuffin, throughout the day. Competing firms, such as Burger King and Wendy's have followed this strategy as well. Suppose Figure 1 below illustrates the market for fast food breakfast sandwiches. The demand for breakfast sandwiches has increased, shifting the demand curve to the right from D_1 to D_2, resulting in an increase in both the equilibrium price (P_1 to P_2) and equilibrium quantity (Q_1 to Q_2). Figure 2 illustrates the market for hamburgers. The decline in demand is shown by the demand curve shifting to the left from D_1 to D_2, resulting in a decrease in both the equilibrium price (P_1 to P_2) and equilibrium quantity (Q_1 to Q_2). This result is a typical one when demand shifts between two goods that are substitutes.

McDonald's plans to continue the expansion of its mobile order-and-pay system, with the intention of launching the service in 20,000 restaurants by the end of 2017. The company is also exploring delivery options for the U.S. market, a strategy that has been successful for McDonald's in Asia. Expanding its mobile order and pay system would appeal to the younger generation of tech-savvy consumers who like to order and pay for products via smartphone apps. A delivery option would appeal to a wide variety of consumers who either do not have time or do not want to take the time to go to a McDonald's location to buy food. Both of these options will likely increase demand for McDonald's menu items.

Thinking Critically

1. Why is it particularly important for a firm like McDonald's to stay ahead of trends such as consumers' desire to eat breakfast food throughout the day or younger consumers wanting to order online?
2. Suppose that McDonald's and its competitors successfully implement self-service kiosks in their U.S restaurants, and this investment in technology allows the firms to reduce the number of employees at each location. How would this change affect the market for breakfast sandwiches? Draw a demand and supply graph to illustrate this situation, and explain what happens to equilibrium price and equilibrium quantity.

Figure 1: An increase in demand for breakfast sandwiches shifts the demand curve to the right, increasing both equilibrium price and equilibrium quantity.

Figure 2: A decrease in the demand for hamburgers, a substitute good for breakfast sandwiches, shifts the demand curve to the left, decreasing both equilibrium price and equilibrium quantity.

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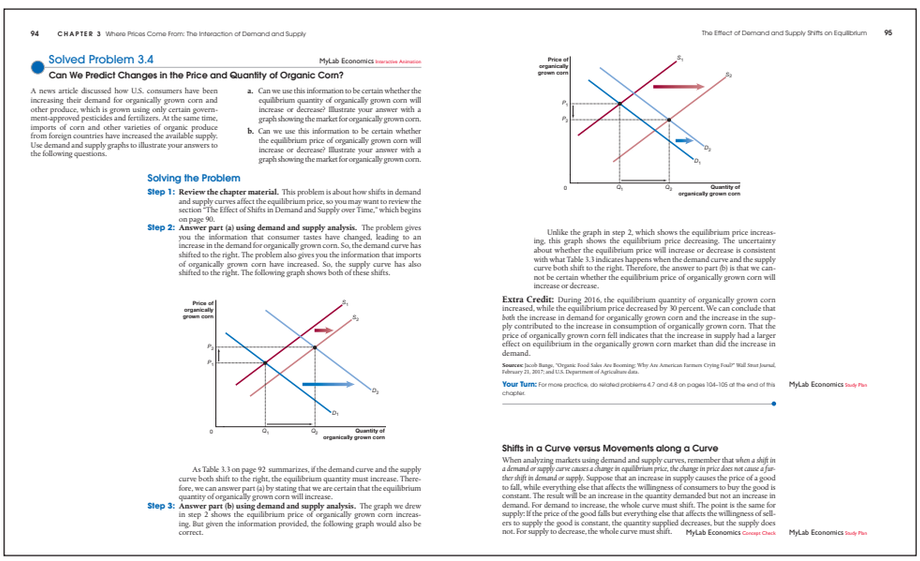
Solved Problems

Many students have great difficulty handling applied economics problems. We help students overcome this hurdle by including in each chapter two or three worked-out problems that analyze real-world economic issues they hear and read about in the news. Our goals are to keep students focused on the main ideas of each chapter and give them a model of how to solve an economic problem by breaking it down step by step. We tie additional exercises in the end-of-chapter *Problems and Applications* section to every *Solved Problem*. Additional *Solved Problems* appear in the *Instructor's Manuals*. In addition, the Test Banks include problems tied to the *Solved Problems* in the main book. Each of the 61 *Solved Problems* in the printed text is accompanied by a similar Interactive *Solved Problem* on MyLab Economics, so students can have more practice and build their problem-solving skills. These interactive tutorials help students learn to think like economists and apply basic problem-solving skills to homework, quizzes, and exams. Each *Solved Problem* on MyLab Economics and in the digital eText also includes at least one additional graded practice exercise for students.



Solved Problem 3.4 MyLab Economics Interactive Animation

Can We Predict Changes in the Price and Quantity of Organic Corn?

A news article discussed how U.S. consumers have been increasing their demand for organically grown corn and other produce, which is grown using only certain government-approved pesticides and fertilizers. At the same time, imports of corn and other varieties of organic produce from foreign countries have increased the available supply. Use demand and supply graphs to illustrate your answers to the following questions.

a. Can we use this information to be certain whether the equilibrium quantity of organically grown corn will increase or decrease? Illustrate your answer with a graph showing the market for organically grown corn.

b. Can we use this information to be certain whether the equilibrium price of organically grown corn will increase or decrease? Illustrate your answer with a graph showing the market for organically grown corn.

Solving the Problem

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

Step 2: Answer part (a) using demand and supply analysis. The problem gives you the information that consumer tastes have changed, leading to an increase in the demand for organically grown corn. So, the demand curve has shifted to the right. The problem also gives you the information that imports of organically grown corn have increased. So, the supply curve has also shifted to the right. The following graph shows both of these shifts.

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

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

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

Extra Credit: During 2016, the equilibrium quantity of organically grown corn increased, while the equilibrium price decreased by 30 percent. We can conclude that both the increase in demand for organically grown corn and the increase in the supply contributed to the increase in consumption of organically grown corn. That the price of organically grown corn fell indicates that the increase in supply had a larger effect on equilibrium in the organically grown corn market than did the increase in demand.

Sources: Jacob Bunge, "Organic Food Sales Are Booming; Why Are American Farmers Crying Foul?" Wall Street Journal, February 21, 2017; and U.S. Department of Agriculture data.

Your Turn: For more practice, do related problems 4.7 and 4.8 on pages 104–105 at the end of this chapter. MyLab Economics Study Plan

Shifts in a Curve versus Movements along a Curve

When analyzing markets using demand and supply curves, remember that *when a shift in a demand or supply curve causes a change in equilibrium price, the change in price does not cause a further shift in demand or supply*. Suppose that an increase in supply causes the price of a good to fall, while everything else that affects the willingness of consumers to buy the good is constant. The result will be an increase in the quantity demanded but not an increase in demand. For demand to increase, the whole curve must shift. The point is the same for supply: If the price of the good falls but everything else that affects the willingness of sellers to supply the good is constant, the quantity supplied decreases, but the supply does not. For supply to decrease, the whole curve must shift. MyLab Economics Concept Check

MyLab Economics Study Plan

Apply the Concept

Each chapter includes two to four *Apply the Concept* features that provide real-world reinforcement of key concepts and help students learn how to interpret what they read on the Web and in newspapers. Most of the 100 *Apply the Concept* features use relevant, stimulating, and provocative news stories focused on businesses and policy issues. One-third of them are new to this edition, and most others have been updated. Several discuss health care and trade, which have been at the forefront of recent policy discussions. Each *Apply the Concept* has at least one supporting end-of-chapter problem to allow students to test their understanding of the topic discussed. We prepared and filmed a two- or three-minute video to explain the key point of each *Apply the Concept*. These videos are located on MyLab Economics. We include related assessment with each video, so students can test their understanding. The goal of these videos is to summarize key content and bring the applications to life. In our experience, many students benefit from this type of online learning and assessment.

Apply the Concept

MyLab Economics Video

Forecasting the Demand for Premium Bottled Water

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

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

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

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

Sara Stathas/Alamy Stock Photo

How will changes in demographics, income, and tastes shape the market for premium bottled water?

Sources: Jennifer Maloney, "PepsiCo Gives Its 'Premium' Water a Super Bowl Push," *Wall Street Journal*, January 24, 2017; Quentin Fottrell, "Bottled Water Overtakes Soda as America's No. 1 Drink—Why You Should Avoid Both," marketwatch.com, March 12, 2017; and Richard Tedlow, *New and Improved: The Story of Mass Marketing in America*, Cambridge, MA: Harvard Business School Press, 1996.

Your Turn: Test your understanding by doing related problem 1.17 on page 102 at the end of this chapter.

Don't Let This Happen to You

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

Concept Checks

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

Don't Let This Happen to You

Remember: A Change in a Good's Price Does *Not* Cause the Demand or Supply Curve to Shift

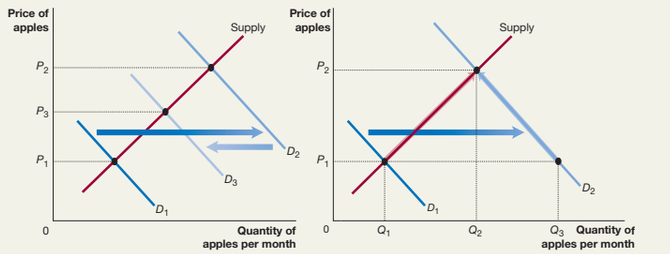
Suppose a student is asked to draw a demand and supply graph to illustrate how an increase in the price of oranges would affect the market for apples, with other variables being constant. He draws the graph on the left and explains it as follows: "Because apples and oranges are substitutes, an increase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

You should disagree. The student has correctly understood that an increase in the price of oranges will cause the demand curve for apples to shift to the right. But, the second demand curve shift the student describes, from D_2 to D_3, will not take place. Changes in the price of a product do not result in shifts in the product's demand curve. Changes in the price of a product result only in movements along a demand curve.

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

MyLab Economics Study Plan

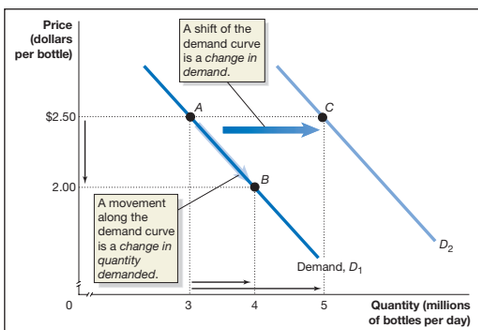
Your Turn: Test your understanding by doing related problems 4.13 and 4.14 on page 105 at the end of this chapter.



Graphs and Summary Tables

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

1. Detailed captions
2. Boxed notes
3. Color-coded curves
4. Summary tables with graphs (see pages 80, 85, and 828 for examples)



MyLab Economics Animation

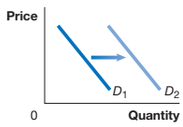
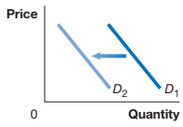
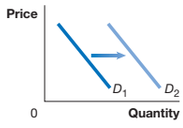
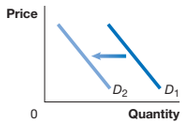
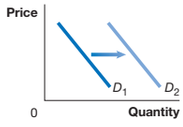
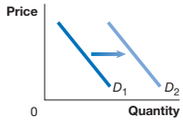
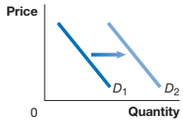
Figure 3.3

A Change in Demand versus a Change in Quantity Demanded

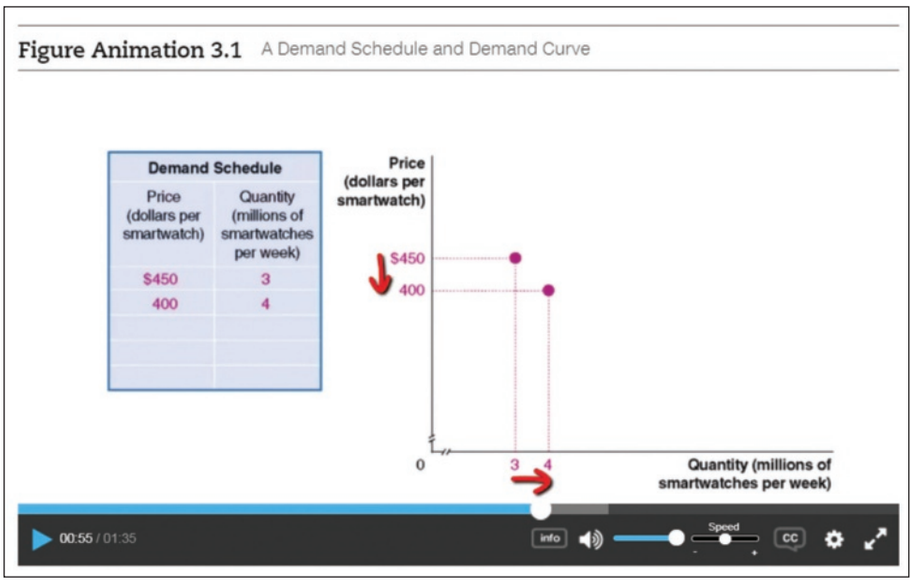
If the price of premium bottled water falls from $2.50 to $2.00, the result will be a movement along the demand curve from point *A* to point *B*—an increase in quantity demanded from 3 million bottles to 4 million. If consumers' incomes increase, or if another factor changes that makes consumers want more of the product at every price, the demand curve will shift to the right—an increase in demand. In this case, the increase in demand from D_1 to D_2 causes the quantity of premium bottled water demanded at a price of $2.50 to increase from 3 million bottles at point *A* to 5 million at point *C*.

Table 3.1

Variables That Shift Market Demand Curves

An increase in ...	shifts the demand curve ...	because ...
income (and the good is normal)		consumers spend more of their higher incomes on the good.
income (and the good is inferior)		consumers spend less of their higher incomes on the good.
the price of a substitute good		consumers buy less of the substitute good and more of this good.
the price of a complementary good		consumers buy less of the complementary good and less of this good.
taste for the good		consumers are willing to buy a larger quantity of the good at every price.
population		additional consumers result in a greater quantity demanded at every price.
the expected price of the good in the future		consumers buy more of the good today to avoid the higher price in the future.

Each of the 272 numbered figures in the text has a supporting animated version on MyLab Economics. The goal of this digital resource is to help students understand shifts in curves, movements along curves, and changes in equilibrium values. Having an animated version of a graph helps students who have difficulty interpreting the static version in the printed text. We include graded practice exercises with the animations. In our experience, many students benefit from this type of online learning.



Approximately 35 graphs are continuously updated online with the latest available data from FRED (Federal Reserve Economic Data), which is a comprehensive, up-to-date data set maintained by the Federal Reserve Bank of St. Louis. Students can display a pop-up graph that shows new data. The goal of this digital feature is to help students understand how to work with data and understand how including new data affects graphs.

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

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

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

Real-Time Data Exercises

We end select chapters with at least two *Real-Time Data Exercises* that help students become familiar with a key data source, learn how to locate data, and develop skills in interpreting data. *Real-Time Data Analysis* (*RTDA*) *Exercises,* marked with , allow students and instructors to use the very latest data from FRED, the Federal Reserve Bank of St. Louis.

Developing Career Skills

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

Economics in Your Life & Career

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

Economics in Your Life & Career

Can You Forecast the Future Demand for Premium Bottled Water?

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

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

Economics in Your Life & Career

Can You Forecast the Future Demand for Premium Bottled Water?

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

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

The factors discussed in this chapter provide you with the basic information needed to forecast demand for premium bottled water, although arriving at numerical forecasts requires using statistical analysis that you can learn in more advanced courses.

Instructor Teaching Resources

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

Supplements Available to Instructors for Download at www.pearsonhighered.com	Features of the Supplement
Instructor's Manuals Authored by Edward Scahill of the University of Scranton	• Chapter-by-chapter summaries organized by learning objectives • Extended examples and class exercises • Teaching outlines incorporating key terms and definitions, teaching tips, topics for class discussion • New *Solved Problem*s • New *Apply the Concept* features • Solutions to all review questions, problems, and real-time data exercises in the book
Two Test Banks for *Microeconomics* and for *Macroeconomics* Authored by Randy Methenitis of Richland College	• Each volume includes 4,000 multiple-choice, true/false, short-answer, and graphing questions. • Test questions are annotated with the following categories: **Difficulty**—1 for straight recall; 2 for some analysis; and 3 for complex analysis **Type**—multiple-choice, true/false, short-answer, essay **Topic**—the term or concept the question supports **Learning outcome** **Page number** in the main book **Special feature** in the main book **The Association to Advance Collegiate Schools of Business** (AACSB) **Guidelines** (see description on the next page)
Computerized TestGen	• Allows instructors to customize, save, and generate classroom tests. • Instructors can edit, add, or delete questions from the Test Banks; analyze test results; and organize a database of tests and student results. • Many options are available for organizing and displaying tests, along with search and sort features. • The software and the Test Banks can be downloaded from www.pearsonhighered.com.
Three Sets of PowerPoint Lecture Presentations Authored by Paul Holmes of Ashland University	• A comprehensive set of PowerPoint slides can be used by instructors for class presentations or by students for lecture preview or review. These slides include all the graphs, tables, and equations in the textbook. Two versions are available—step-by-step mode, in which you can build graphs as you would on a blackboard, and automated mode, in which you use a single click per slide. • A comprehensive set of PowerPoint slides have Classroom Response Systems (CRS) questions built in so that instructors can incorporate CRS "clickers" into their classroom lectures. • Student versions of the PowerPoint slides are available as .pdf files. This version allows students to print the slides and bring them to class for note taking.

What Is the AACSB?

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

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Accuracy Review Board

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

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