Business School Edition

MISHKIN

The Economics of Money, Banking, and Financial Markets

FIFTH EDITION


Pearson

Prepare, Apply, Assess and Develop Employability Skills with MyLab Economics

83%

of students said it helped them earn higher grades on homework, exams, or the course

*Source: 2016 Student Survey, n 10,263

MyLab™ Economics is an online homework, tutorial, and assessment program constructed to work with this text to engage students and improve results. It was designed to help students develop and assess the skills and applicable knowledge that they will need to succeed in their courses and their future careers.

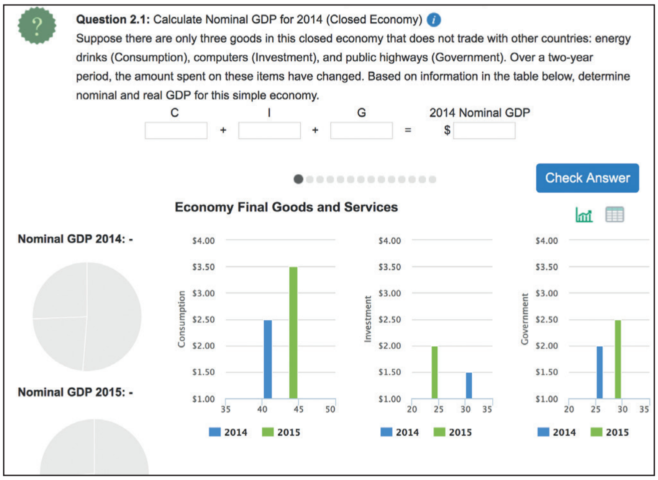
See what students had to say about MyLab Economics:

"Usually when I do homework myself and don't get it I am stuck, but [MyLab Economics] provided the tools necessary to help me learn how to work my way through the trickiest problems."

— Zainul Lughmani,
Binghamton University

Digital Interactives

Economic principles are not static ideas, and learning them shouldn't be either! Digital Interactives are dynamic and engaging assessment activities that promote **critical thinking** and **application** of key economic principles.



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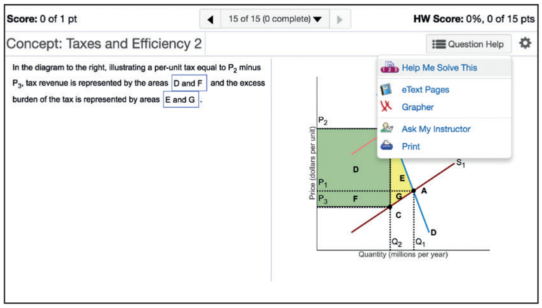
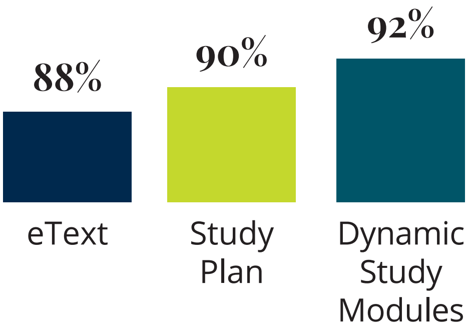
Question Help

MyLab Economics homework and practice questions are correlated to the textbook, and many generate algorithmically to give students unlimited opportunity for mastery of concepts. If students get stuck, Learning Aids including Help Me Solve This and eText Pages walk them through the problem and identify helpful information in the text, giving them assistance when they need it most.



"[MyLab Economics] provides ample practice and explanation of the concepts at hand."

— Heather Burkett, University of Nebraska at Omaha



% of students who found learning tool helpful

Dynamic Study Modules help students study chapter topics effectively on their own by continuously assessing their **knowledge application** and performance in real time. These are available as prebuilt Prepare assignments, and are accessible on smartphones, tablets, and computers.

Pearson eText enhances student learning—both in and outside the classroom. Worked examples, videos, and interactive tutorials bring learning to life, while algorithmic practice and self-assessment opportunities test students' understanding of the material. Accessible anytime, anywhere via MyLab or the app.

The **MyLab Gradebook** offers an easy way for students and instructors to view course performance. Item Analysis allows instructors to quickly see trends by analyzing details like the number of students who answered correctly/incorrectly, time on task, and median time spend on a question by question basis. And because it's correlated with the AACSB Standards, instructors can track students' progress toward outcomes that the organization has deemed important in preparing students to be **leaders.**

87%

of students would tell their instructor to keep using MyLab Economics

For additional details visit: www.pearson.com/mylab/economics

THE ECONOMICS OF
MONEY, BANKING, AND FINANCIAL MARKETS

Business School Edition

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Economic Development

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Williamson
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THE ECONOMICS OF MONEY, BANKING, AND FINANCIAL MARKETS

Business School Edition

Fifth Edition

Frederic S. Mishkin
Columbia University

Pearson

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To Sally

About the Author

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Professor Mishkin's research focuses on monetary policy and its impact on financial markets and the aggregate economy. He is the author of more than twenty books, including *Macroeconomics: Policy and Practice,* Second Edition (Pearson, 2015); *Financial Markets and Institutions*, Ninth Edition (Pearson, 2018); *Monetary Policy Strategy* (MIT Press, 2007); *The Next Great Globalization: How Disadvantaged Nations Can Harness Their Financial Systems to Get Rich* (Princeton University Press, 2006); *Inflation Targeting: Lessons from the International Experience* (Princeton University Press, 1999); *Money, Interest Rates, and Inflation* (Edward Elgar, 1993); and *A Rational Expectations Approach to Macroeconometrics: Testing Policy Ineffectiveness and Efficient Markets Models* (University of Chicago Press, 1983). In addition, he has published more than 200 articles in such journals as *American Economic Review, Journal of Political Economy*, *Econometrica*, *Quarterly Journal of Economics, Journal of Finance*, and *Journal of Monetary Economics*.

Professor Mishkin has served on the editorial board of *American Economic Review* and has been an associate editor at *Journal of Business and Economic Statistics, Journal of Applied Econometrics, Journal of Economic Perspectives, Journal of International Money and Finance,* and *Journal of Money, Credit and Banking*; he also served as the editor of the Federal Reserve Bank of New York's *Economic Policy Review*. He is currently an associate editor (member of the editorial board) at six academic journals, including *International Finance*; *Finance India*; *Review of Development Finance; Borsa Economic Review; PSU Research Review* and *Emerging Markets,* and *Finance and Trade.* He has been a consultant to the Board of Governors of the Federal Reserve System, the World Bank, and the International Monetary Fund, as well as to many central banks throughout the world. He was also a member of the International Advisory Board to the Financial Supervisory Service of South Korea and an advisor to the Institute for Monetary and Economic Research at the Bank of Korea. Professor Mishkin was a Senior Fellow at the Federal Deposit Insurance Corporation's Center for Banking Research and was an academic consultant to and serves on the Economic Advisory Panel and Monetary Advisory Panel of the Federal Reserve Bank of New York.

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Preface

There has never been a more exciting time to teach money and banking. The recent worldwide financial crisis and its aftermath cast a spotlight on the importance of banks, financial markets, and monetary policy to the health of our economy. I experienced this firsthand when I served as a Governor of the Federal Reserve System from 2006 to 2008, and in this book, I emphasize the rich tapestry of recent economic events to enliven the study of money, banking, and financial markets.

NEW TO THIS EDITION

Although this text has undergone a major revision, it retains the basic hallmarks that have made it the best-selling textbook on money and banking over the past four editions. As with past editions this fifth edition uses basic economic principles to explain financial markets, financial institutions, and monetary policy with rigor and clarity. With each edition, I update content and features based on market feedback from economics professors and students using the book as well as the latest world financial episodes. For the past several editions, the digital assets for this book, which are available on MyLab Economics, have evolved and expanded.

New Content

New developments in the money and banking field have prompted me to add the following new sections, boxes, and applications that keep the text current:

- A new section on money, banking, and financial markets and your career (Chapter 1) to show students how the study of money, banking, and financial markets can help advance their career, even if they do not end up working on Wall Street or in a bank.
- A new global box on negative interest rates in Japan, the United States, and Europe (Chapter 4) illustrates that although it is normal for interest rates to be positive, recently we have seen negative interest rates in a number of countries.
- A new application on how low inflation and secular stagnation can explain low interest rates in Europe, Japan, and the United States (Chapter 5) shows how the supply and demand model explains current interest rate movements.
- New sections on the Dodd-Frank Act (Chapter 12) describe important provisions on annual stress tests and limits on Federal Reserve lending.
- A new section on where regulation might head in the future after Dodd-Frank (Chapter 12) discusses current debates in Congress on financial regulation.
- A new section on negative interest rates on banks' deposits at the central bank (Chapter 18) describes this new, nonconventional monetary policy tool and how effective it might be.
- A new section on interest on reserves paid by the European Central Bank (Chapter 18) describes this important policy tool of the ECB.
- A revised discussion of the theory of purchasing power parity and why it does not fully explain exchange rates in the short run (Chapter 20) provides a clearer presentation than in the previous edition.

- A new application on Burgernomics, Big Macs, and Purchasing Power Parity (Chapter 20) is a fun way of showing students how purchasing power parity works in practice.
- A new application on Brexit and the British pound (Chapter 20) discusses the controversial exit of Britain from the euro and why it had such a big impact on the value of the British currency.
- A revised section on the balance of payments (Chapter 21) provides a clearer discussion of the key items in the balance of payments that students hear about in the media.
- A revised global box on whether we should worry about the large U.S. current account deficit (Chapter 21) helps students interpret claims made about the current account in both the media and in Congress.

In addition, figures and tables have been updated with data through 2017. Approximately 80 figures are available on MyLab Economics as mini-lecture videos. A number of end-of-chapter problems in each chapter are updated or new. Students can complete these problems on MyLab Economics where they receive instant feedback and tutorial guidance.

SOLVING TEACHING AND LEARNING CHALLENGES

It's important for students to understand the models, key terms, and equations in any economics textbook. However, students can get bogged down in this detail and miss the bigger picture. The content, structure, and features of this book were designed based on market feedback and many years of teaching experience to build students' skill in applying these elements—models, terms, and equations—to real-world events. Students also learn to apply what they learn to decisions that are directly relevant to their lives, such as what might happen to interest rates on car loans or mortgages, and why events might affect the unemployment rate, which can have a major impact on how easy it is for them to get a job.

Hallmark Learning Features

Here is an overview of the hallmark features of the book that solve teaching problems and facilitate student learning.

- A **unifying, analytic framework** uses a few basic economic principles that enable students to develop a disciplined, logical way of analyzing the structure of financial markets and understanding foreign exchange changes, financial institution management, and the role of monetary policy in the economy.
- A **careful, step-by-step development of economic models** (the approach used in the best principles of economics textbooks), which makes it easier for students to learn.
- **Graphs and Mini-Lecture Videos** with detailed captions help students clearly understand the interrelationships among the plotted variables and the principles of analysis. The enhanced Pearson e-text in MyLab Economics provides a new way of learning that is particularly geared to today's students. Not only will students be able to read the material in the textbook but by a simple click on an icon they will be able to watch over 80 mini-lecture videos presented by the author, one for every analytic figure in the text. For analytic figures, these

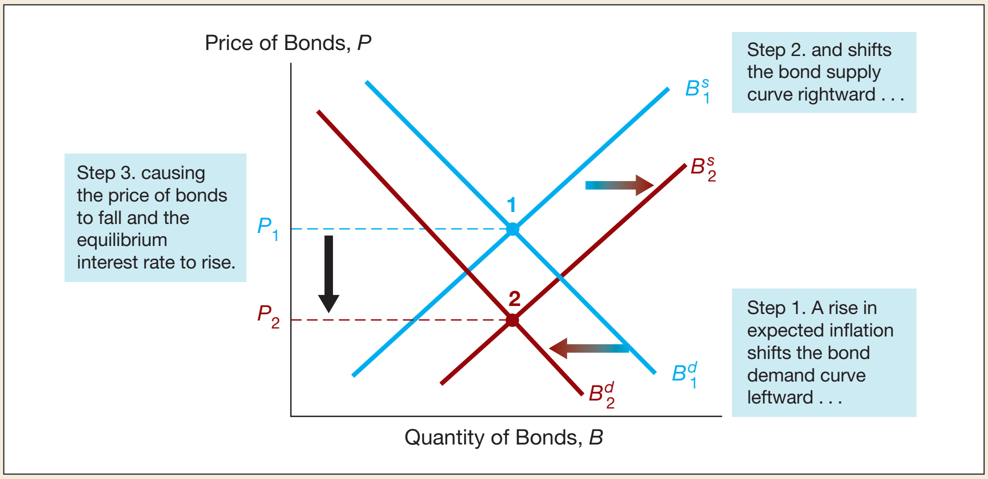
mini-lectures build up each graph step-by-step and explain the intuition necessary to fully understand the theory behind the graph. The mini-lectures are an invaluable study tool for students who typically learn better when they see and hear economic analysis rather than read it.

MyLab Economics Mini-lecture

FIGURE 4

Response to a Change in Expected Inflation

When expected inflation rises, the supply curve shifts from B_1^s to B_2^s, and the demand curve shifts from B_1^d to B_2^d. The equilibrium moves from point 1 to point 2, causing the equilibrium bond price to fall from P_1 to P_2 and the equilibrium interest rate to rise.



- The complete integration of an international perspective throughout the text through the use of **Global boxes. These** present interesting material with an international focus.

Global **The European Sovereign Debt Crisis**

The global financial crisis of 2007–2009 led not only to a worldwide recession but also to a sovereign debt crisis that still threatens to destabilize Europe today. Up until 2007, all of the countries that had adopted the euro found their interest rates converging to very low levels, but with the onset of the global financial crisis, several of these countries were hit very hard by the contraction in economic activity, which reduced tax revenues at the same time that government bailouts of failed financial institutions required additional government outlays. The resulting surge austerity measures aimed at dramatically cutting government spending and raising taxes, interest rates on Greek debt soared, eventually rising to nearly 40%, and the debt-to-GDP ratio climbed to 160% of GDP in 2012. Even with bailouts from other European countries and liquidity support from the European Central Bank, Greece was forced to write down the value of its debt held in private hands by more than half, and the country was subject to civil unrest, with massive strikes and the resignation of the prime minister.

- **Inside the Fed boxes** give students a feel for the operation and structure of the Federal Reserve.

Inside the Fed — Was the Fed to Blame for the Housing Price Bubble?

Some economists—most prominently, John Taylor of Stanford University—have argued that the low interest rate policy of the Federal Reserve in the 2003–2006 period caused the housing price bubble.* Taylor argues that the low federal funds rate led to low mortgage rates that stimulated housing demand and encouraged the issuance of subprime mortgages, both of which led to rising housing prices and a bubble.

In a speech given in January 2010, then-Federal Reserve Chairman Ben Bernanke countered this argument.† He concluded that monetary policy was not to blame for the housing price bubble. First, he said, it is not at all clear that the federal funds rate was too low during the 2003–2006 period. Rather, the culprits were the proliferation of new mortgage products that lowered mortgage payments, a relaxation of lending standards that brought more buyers into the housing market, and capital inflows from countries such as China and India. Bernanke's speech was very controversial, and the debate over whether monetary policy was to blame for the housing price bubble continues to this day.

*John Taylor, "Housing and Monetary Policy," in Federal Reserve Bank of Kansas City, *Housing, Housing Finance and Monetary Policy* (Kansas City: Federal Reserve Bank of Kansas City, 2007), 463–476.

†Ben S. Bernanke, "Monetary Policy and the Housing Bubble," speech given at the annual meeting of the American Economic Association, Atlanta, Georgia, January 3, 2010; http://www.federalreserve.gov/newsevents/speech/bernanke20100103a.htm.

- **Applications,** numbering more than 50, which demonstrate how the analysis presented can be used to explain many important real-world situations.

APPLICATION Explaining Current Low Interest Rates in Europe, Japan, and the United States: Low Inflation and Secular Stagnation

In the aftermath of the global financial crisis, interest rates in Europe and the United States, as well as in Japan, have fallen to extremely low levels. Indeed, as discussed in Chapter 4, we have seen that interest rates have even sometimes turned negative. Why are interest rates in these countries at such low levels?

- **FYI boxes** highlight dramatic historical episodes, interesting ideas, and intriguing facts related to the content of the chapter.

FYI — Should You Hire an Ape as Your Investment Adviser?

The *San Francisco Chronicle* came up with an amusing way of evaluating how successful investment advisers are at picking stocks. They asked eight analysts to pick five stocks at the beginning of the year and then compared the performance of their stock picks to those chosen by Jolyn, an orangutan living at Marine World/Africa USA in Vallejo, California. Jolyn beat the investment advisers as often as they beat her. Given this result, you might be just as well off hiring an orangutan as your investment adviser as you would be hiring a human being!

- **End-of-chapter questions and applied problems**, numbering more than 600, help students learn the subject matter by applying economic concepts.

QUESTIONS

All questions are available in **MyLab Economics** *at* www.pearson.com/mylab/economics.

1. How does the concept of asymmetric information help to define a financial crisis?
2. How can the bursting of an asset-price bubble in the stock market help trigger a financial crisis?
3. How does an unanticipated decline in the price level cause a drop in lending?
4. Define "financial frictions" in your own terms and explain why an increase in financial frictions is a key element in financial crises.
5. How does a deterioration in balance sheets of financial
10. Provide one argument in favor of and one against the idea that the Fed was responsible for the housing price bubble of the mid-2000s.
11. What role does weak financial regulation and supervision play in causing financial crises?
12. Describe two similarities and two differences between the United States' experiences during the Great Depression and the Great Recession financial crisis of 2007–2009.
13. What do you think prevented the financial crisis of 2007–2009 from becoming a depression?
14. What technological innovations led to the development of the subprime mortgage market?

MyLab Economics

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

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

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

Teach Your Course Your Way Your course is unique. So whether you'd like to build your own assignments, teach multiple sections, or set prerequisites, MyLab gives you the flexibility to easily create *your* course to fit *your* needs.

Improve Student Results When you teach with MyLab, student performance improves. That's why instructors have chosen MyLab for over 20 years, touching the lives of over 50 million students.

Easy and Flexible Assignment Creation

MyLab Economics allows for easy and flexible assignment creation, allowing instructors to assign a variety of assignments tailored to meet their specific course needs.

Visit http://www.pearson.com/mylab/economics for more information on Digital Interactives, our LMS integration options, and course management options for any course of any size.

DEVELOPING CAREER SKILLS

The unifying, analytic framework and step-by-step development of economic models in this text enable students to develop the critical thinking skills they need to successfully pursue their careers. The study of money, banking, and financial markets is particularly valuable if a student wants a job in the financial sector. However, even if their interests lie elsewhere, students benefit by understanding why interest rates rise or fall, helping them to make decisions about whether to borrow now or to wait until later. Knowing how banks and other financial institutions are managed may help students get a better deal when they need to borrow or when they supply them with funds. Knowledge of how financial markets work can enable students to make better investment decisions, whether for themselves or for the companies they work for.

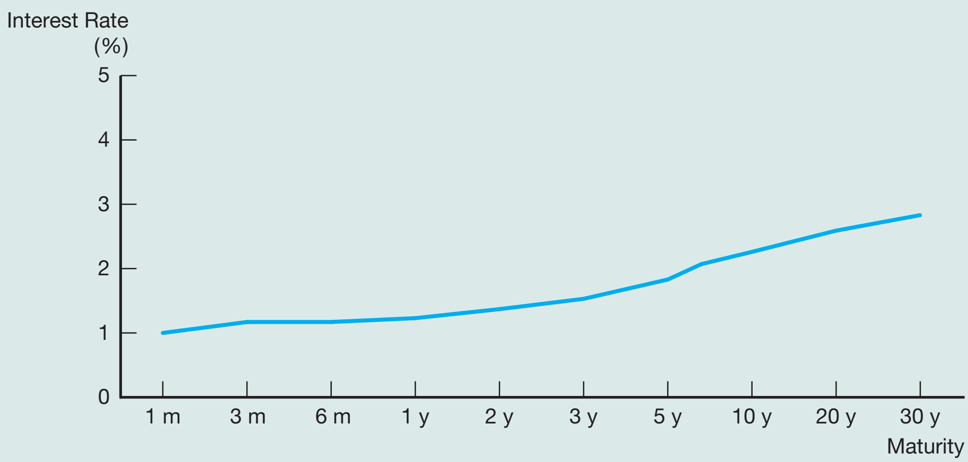
Career Skill Features

This text also has additional features, discussed below, which directly develop career skills.

- A special feature called "Following the Financial News," included to encourage reading of a financial newspaper. **Following the Financial News boxes** introduce students to relevant news articles and data that are reported daily in the press, and teach students how to interpret these data. Being able to think critically about what is reported in the financial press is a skill that can make students far more effective in their future jobs.

Following the Financial News **Yield Curves**

Many newspapers and Internet sites such as http://www.finance.yahoo.com publish a daily plot of the yield curves for Treasury securities. An example for July 24, 2017 is presented here. The numbers on the vertical axis indicate the interest rate for the Treasury security, with the maturity term given on the horizontal axis, with "m" denoting "month" and "y" denoting "year."



- **Real Time Data** in a high percentage of the in-text data figures are labeled *MyLab Economics Real-Time Data*. For these figures, students can see the latest data in the enhanced Pearson e-text, using the Federal Reserve Bank of St. Louis's FRED database and learn where they can access this data when they need to throughout their career.
- **Real-Time Data Analysis Problems**, included in MyLab Economics, which ask students to apply up-to-the-minute data, taken from the St. Louis Federal Reserve Bank's FRED database, so that they can understand what is happening in the economy in real time. These problems, marked with , ask the student to download data from the Federal Reserve Bank of St. Louis FRED website and then use the data to answer questions about current issues in money and banking. In MyLab Economics, these easy-to-assign and automatically graded Real-Time Data Analysis exercises communicate directly with the FRED site, so that students see updated data every time new data is posted by FRED. Thus the Real-Time Data Analysis exercises offer a no-fuss solution for instructors who want to make the most current data a central part of their macroeconomics course. These exercises will give students practice manipulating data, a skill that employers value highly.

DATA ANALYSIS PROBLEMS

The Problems update with real-time data in **MyLab Economics** and are available for practice or instructor assignment.

1. Go to the St. Louis Federal Reserve FRED database, and find data on the exchange rate of U.S. dollars per British pound (DEXUSUK). A Mini Cooper can be purchased in London, England, for £17,865 or in Boston, United States, for $23,495.

   a. Use the most recent exchange rate available to calculate the real exchange rate of the London Mini per Boston Mini.

   b. Based on your answer to part (a), are Mini Coopers relatively more expensive in Boston or in London?

   c. What price in British pounds would make the Mini Cooper equally expensive in both locations, all else being equal?

FLEXIBILITY AND MODULARITY

In using previous editions, adopters, reviewers, and survey respondents have continually praised this text's flexibility and modularity—that is, the option to pick and choose which chapters to cover and in what order to cover them. Flexibility and modularity are especially important in the money and banking course because there are as many ways to teach this course as there are instructors. To satisfy the diverse needs of instructors, the text achieves flexibility as follows:

- Core chapters provide the basic analysis used throughout the book, and other chapters or sections of chapters can be used or omitted according to instructor preferences. For example, Chapter 2 introduces the financial system and basic concepts such as transaction costs, adverse selection, and moral hazard. After covering

Chapter 2, the instructor may decide to give more detailed coverage of financial structure by assigning Chapter 8 or may choose to skip Chapter 8 and take any of a number of different paths through the book.

- Part 6 on monetary theory can easily be taught before Part 4 of the text if the instructor wishes to give students a deeper understanding of the rationale behind monetary policy.
- Chapter 25 on the transmission mechanisms of monetary policy can be taught at many different points in the course—either with Part 4, when monetary policy is discussed, or with Chapter 23, when the concept of aggregate demand is developed. Transmission mechanisms of monetary policy can also be taught as a special topic at the end of the course.
- The international approach of the text, accomplished through marked international sections within chapters as well as separate chapters on the foreign exchange market and the international monetary system, is comprehensive yet flexible. Although many instructors will teach all the international material, others will not. Instructors who wish to put less emphasis on international topics can easily skip Chapter 20 on the foreign exchange market and Chapter 21 on the international financial system and monetary policy. The international sections within chapters are self-contained and can be omitted with little loss of continuity.

To illustrate how this book can be used for courses with varying emphases, several course outlines are suggested for a one-semester teaching schedule. More detailed information about how the text can be used flexibly in your course is available in the Instructor's Manual.

- *General Money and Banking Course:* Chapters 1–5, 9–11, 16, 18, 23–24, with a choice of 7 of the remaining 13 chapters
- *General Money and Banking Course with an International Emphasis:* Chapters 1–5, 9–11, 16, 18–21, 23–24, with a choice of 4 of the remaining 10 chapters
- *Financial Markets and Institutions Course:* Chapters 1–12, with a choice of 7 of the remaining 13 chapters

The Business School Edition: A More Finance-Oriented Approach

I am pleased to continue providing two versions of *The Economics of Money, Banking, and Financial Markets*. While both versions contain the core chapters that all professors want to cover, *The Economics of Money, Banking, and Financial Markets*, Business School Edition, presents a more finance-oriented approach—an approach more commonly taught in business schools, but also one that some professors in economics departments prefer when teaching their money and banking courses. The Business School Edition includes chapters on nonbank finance, financial derivatives, and conflicts of interest in the financial industry. The Business School Edition omits the chapters on the *IS* curve and the monetary policy and aggregate demand curves, as well as the chapter on the role of expectations in monetary policy. *The Economics of Money, Banking, and Financial Markets*, Business School Edition, will more closely fit the needs of those professors whose courses put less emphasis on monetary theory.

For professors who desire a comprehensive discussion of monetary theory and monetary policy, *The Economics of Money, Banking, and Financial Markets*, Twelfth Edition, contains all of the chapters on monetary theory. Professors who *do* want this coverage are often hard-pressed to cover all of the finance and institutions chapters. To that end, the Twelfth Edition omits the chapters on nonbank finance, financial derivatives, and conflicts of interest.

Appendices and Additional Resources

Additional resources for the Fifth Edition of *The Economics of Money, Banking, and Financial Markets*, Business School Edition include: (1) the three unique chapters from the twelfth edition; (2) chapters on financial crises in emerging market economies and the *ISLM* model; and (3) more than twenty appendices that cover additional topics and more technical material that instructors might want to include in their courses. This content can be accessed on www.pearson.com/mylab/economics.

Instructors can either use these chapters and appendices in class to supplement the material in the textbook, or recommend them to students who want to expand their knowledge of the money and banking field. Please find them and other additional resources at www.pearson.com/mylab/economics.

INSTRUCTOR TEACHING RESOURCES

This program comes with the following teaching resources.

Supplements available to instructors at www.pearsonhighered.com	Features of the supplement
The Instructor's Resource Manual was prepared by the author and includes the following features:	• Sample course outlines • Chapter outlines • Answers to questions and problems in the text
The Test Bank was prepared by Kathy Kelly of University of Texas at Arlington and James Hueng of Western Michigan University and includes the following features:	• More than 2,500 multiple-choice and essay test items, many with graphs • Questions are connected to the AACSB learning standards (Written and Oral Communication; Ethical Understanding and Reasoning; Analytical Thinking; Information Technology; Interpersonal Relations and Teamwork; Diverse and Multicultural Work; Reflective Thinking; Application of Knowledge)
The Testgen enables instructors to produce exams efficiently:	• This product consists of the multiple-choice and essay questions provided in the online Test Bank, and offers editing capabilities
The PowerPoint Presentation was prepared by Paul Kubik of DePaul University and includes the following features:	• All of the tables and graphs presented in the text • Detailed lecture notes for all the course material • Instructors who prefer to teach with a blackboard can use these PowerPoint slides as their own class notes; for those who prefer to teach with visual aids, the PowerPoint slides afford them the flexibility to do so

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Frederic S. Mishkin

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PART 1

Introduction

Crisis and Response: Global Financial Crisis and Its Aftermath

In August 2007, financial markets began to seize up, and over the next two years the world economy experienced a global financial crisis that was the most severe since the Great Depression years of the 1930s. Housing prices plummeted, the stock market crashed, unemployment skyrocketed, and both businesses and households found they couldn't get credit. Not only did the central bank of the United States, the Federal Reserve, respond by sharply lowering interest rates and intervening in credit markets to provide them with massive amounts of liquidity but the federal government also entered into the act with a $700 billion bailout of weakened financial institutions and huge fiscal stimulus packages totaling over $1 trillion. However, even with these aggressive actions aimed at stabilizing the financial system and boosting the economy, seven years after the crisis the U.S. economy was still experiencing an unemployment rate above 6%, with many homeowners losing their homes. The financial systems of many governments throughout the world were also in tatters.

The global financial crisis and its aftermath demonstrate the importance of banks and financial systems to economic well-being, as well as the major role of money in the economy. Part 1 of this book provides an introduction to the study of money, banking, and financial markets. Chapter 1 outlines a road map of the book and discusses why it is so worthwhile to study money, banking, and financial markets. Chapter 2 provides a general overview of the financial system. Chapter 3 then explains what money is and how it is measured.

1 Why Study Money, Banking, and Financial Markets?

Learning Objectives

- Recognize the importance of financial markets in the economy.
- Describe how financial intermediation and financial innovation affect banking and the economy.
- Identify the basic links among monetary policy, the business cycle, and economic variables.
- Explain the importance of exchange rates in a global economy.
- Explain how the study of money, banking, and financial markets may advance your career.
- Describe how the text approaches the teaching of money, banking, and financial markets.

Preview

You have just heard on the evening news that the Federal Reserve is raising the federal funds rate by $\frac{1}{2}$ of a percentage point. What effect might this have on the interest rate of an automobile loan when you finance your purchase of a sleek new sports car? Does it mean that a house will be more or less affordable in the future? Will it make it easier or harder for you to get a job next year?

This book provides answers to these and other questions by examining how financial markets (such as those for bonds, stocks, and foreign exchange) and financial institutions (banks, insurance companies, mutual funds, and other institutions) work and by exploring the role of money in the economy. Financial markets and institutions affect not only your everyday life but also the flow of trillions of dollars of funds throughout our economy, which in turn affects business profits, the production of goods and services, and even the economic well-being of countries other than the United States. What happens to financial markets, financial institutions, and money is of great concern to politicians and can have a major impact on elections. The study of money, banking, and financial markets will reward you with an understanding of many exciting issues. In this chapter, we provide a road map of this book by outlining these issues and exploring why they are worth studying.

WHY STUDY FINANCIAL MARKETS?

Part 2 of this book focuses on **financial markets**—markets in which funds are transferred from people who have an excess of available funds to people who have a shortage. Financial markets, such as bond and stock markets, are crucial to promoting greater economic efficiency by channeling funds from people who do not have a productive use for them to those who do. Indeed, well-functioning financial markets are a key factor in producing high economic growth, and poorly performing financial markets are one reason that many countries in the world remain desperately poor. Activities in financial markets also have a direct effect on personal wealth, the behavior of businesses and consumers, and the cyclical performance of the economy.

Debt Markets and Interest Rates

A **security** (also called a *financial instrument*) is a claim on the issuer's future income or **assets** (any financial claim or piece of property that is subject to ownership). A **bond** is a debt security that promises to make periodic payments for a specified period of time.[1] Debt markets, also often generically referred to as *bond markets*, are especially important to economic activity because they enable corporations and governments to borrow money to finance their activities, and because it is where interest rates are determined. An **interest rate** is the cost of borrowing or the price paid for the rental of funds (usually expressed as a percentage of the rental of $100 per year). Many types of interest rates are found in the economy—mortgage interest rates, car loan rates, and interest rates on many different types of bonds.

Interest rates are important on a number of levels. On a personal level, high interest rates might deter you from buying a house or a car because the cost of financing would be high. Conversely, high interest rates might encourage you to save because you can earn more interest income by putting aside some of your earnings as savings. On a more general level, interest rates have an impact on the overall health of the economy because they affect not only consumers' willingness to spend or save but also businesses' investment decisions. High interest rates, for example, might cause a corporation to postpone building a new plant that would provide more jobs.

Because changes in interest rates affect individuals, financial institutions, businesses, and the overall economy, it is important to explain substantial fluctuations in interest rates over the past 40 years. For example, the interest rate on three-month Treasury bills peaked at over 16% in 1981. This interest rate fell to 3% in late 1992 and 1993, rose to above 5% in the mid-to-late 1990s, fell to below 1% in 2004, rose to 5% by 2007, fell to near zero from 2009 to 2015, and then began rising again to above 1% by 2017.

Because different interest rates have a tendency to move in unison, economists frequently lump interest rates together and refer to "the" interest rate. As Figure 1 shows, however, interest rates on several types of bonds can differ substantially. The interest rate on three-month Treasury bills, for example, fluctuates more than the other interest rates and is lower on average. The interest rate on Baa (medium-quality) corporate bonds is higher, on average, than the other interest rates, and the spread between it and the other rates became larger in the 1970s, narrowed in the 1990s, rose briefly in the early 2000s, narrowed again, and then rose sharply starting in the summer of 2007. It then began to decline toward the end of 2009, returning to low levels by 2017.

In Chapter 2 we study the role of bond markets in the economy, and in Chapters 4 through 6 we examine what an interest rate is, how the common movements in interest rates come about, and why the interest rates on different bonds vary.

The Stock Market

A **common stock** (typically called simply a **stock**) represents a share of ownership in a corporation. It is a security that is a claim on the earnings and assets of the corporation. Issuing stock and selling it to the public is a way for corporations to raise funds to finance their activities. The stock market, in which claims on the earnings of corporations (shares of stock) are traded, is the most widely followed financial market in almost every country that has one; that's why it's often called simply "the market." A

[1]The definition of *bond* used throughout this book is the broad one commonly used in academic settings, which covers both short- and long-term debt instruments. However, some practitioners in financial markets use the word *bond* to describe only specific long-term debt instruments such as corporate bonds or U.S. Treasury bonds.

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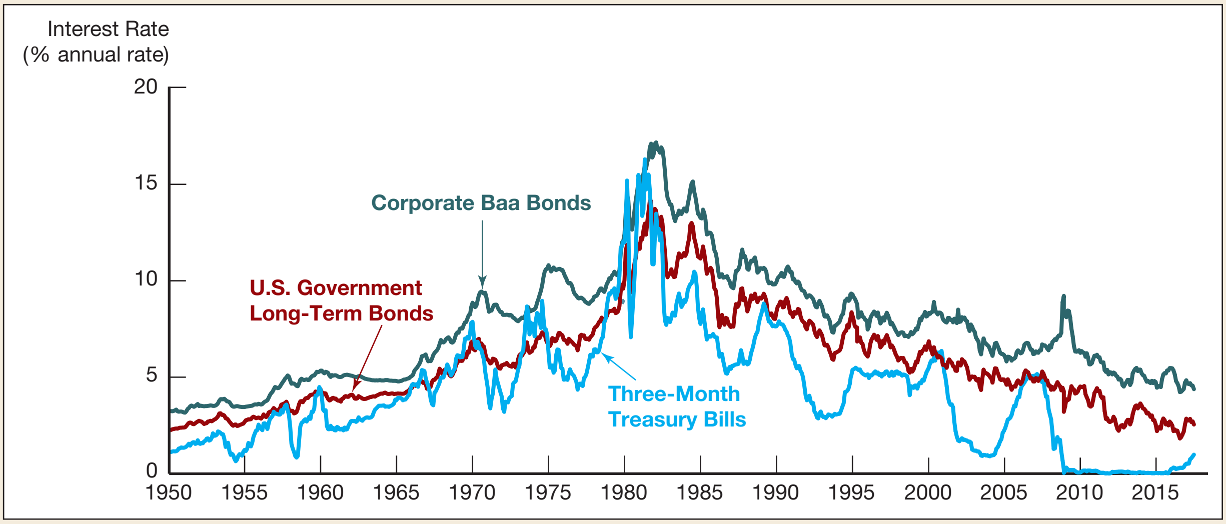

FIGURE 1 Interest Rates on Selected Bonds, 1950–2017

Although different interest rates have a tendency to move in unison, they often differ substantially, and the spreads between them fluctuate.

Source: **Federal Reserve Bank of St. Louis, FRED database:** https://fred.stlouisfed.org/series/TB3MS; https://fred.stlouisfed.org/series/GS10; https://fred.stlouisfed.org/series/BAA

big swing in the prices of shares in the stock market is always a major story on the evening news. People often speculate on where the market is heading and get very excited when they can brag about their latest "big killing," but they become depressed when they suffer a big loss. The attention the market receives can probably be best explained by one simple fact: It is a place where people can get rich—or poor—very quickly.

As Figure 2 indicates, stock prices are extremely volatile. After rising steadily during the 1980s, the market experienced the worst one-day drop in its entire history on October 19, 1987—"Black Monday"—with the Dow Jones Industrial Average (DJIA) falling by 22%. From then until 2000, the stock market experienced one of the greatest rises (often referred to as a "bull market") in its history, with the Dow climbing to a peak of over 11,000. With the collapse of the high-tech bubble in 2000, the stock market fell sharply, dropping by over 30% by late 2002. It then rose to an all-time high above the 14,000 level in 2007, only to fall by over 50% of its value to a low below 7,000 in 2009. Another bull market then began, with the Dow reaching new highs above 22,000 by 2017. These considerable fluctuations in stock prices affect the size of people's wealth and, as a result, their willingness to spend.

The stock market is also an important factor in business investment decisions, because the price of shares affects the amount of funds that can be raised by selling newly issued stock to finance investment spending. A higher price for a firm's shares means that the firm can raise a larger amount of funds, which it can then use to buy production facilities and equipment.

In Chapter 2 we examine the role that the stock market plays in the financial system, and in Chapter 7 we return to the issue of how stock prices behave and respond to information in the marketplace.

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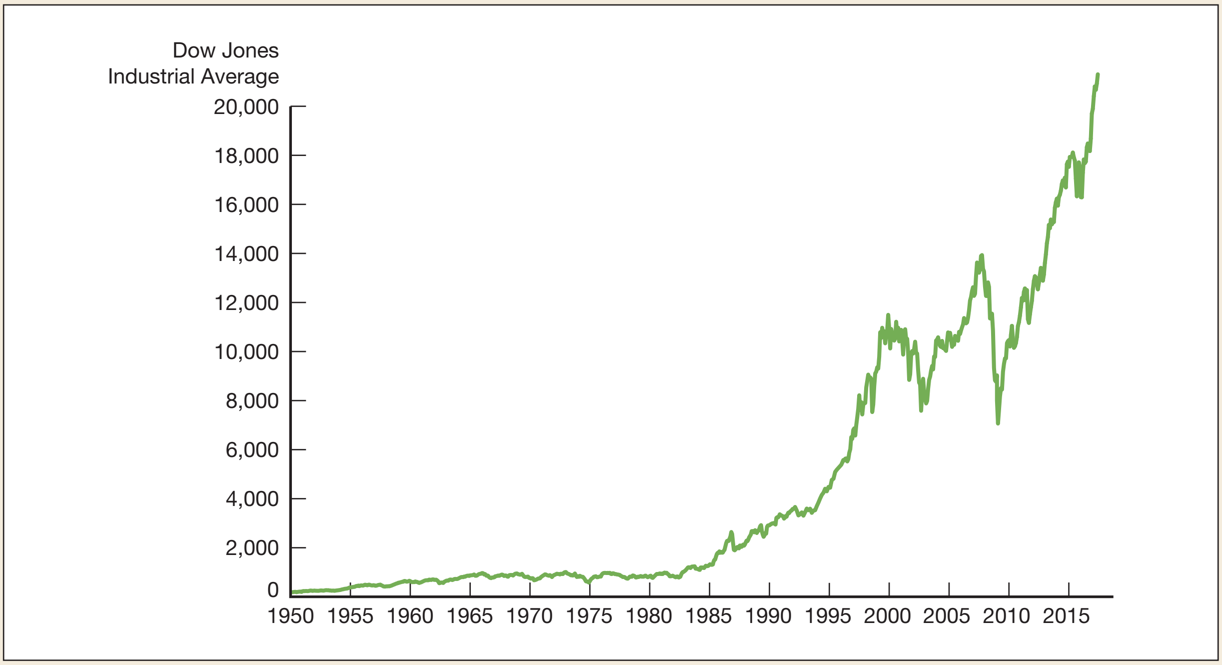

FIGURE 2 Stock Prices as Measured by the Dow Jones Industrial Average, 1950–2017

Stock prices are extremely volatile.

Source: **Federal Reserve Bank of St. Louis, FRED database:** https://fred.stlouisfed.org/series/DJIA

WHY STUDY FINANCIAL INSTITUTIONS AND BANKING?

Part 3 of this book focuses on financial institutions and the business of banking. Banks and other financial institutions are what make financial markets work. Without them, financial markets would not be able to move funds from people who save to people who have productive investment opportunities. Thus financial institutions play a crucial role in the economy.

Structure of the Financial System

The financial system is complex, comprising many different types of private sector financial institutions, including banks, insurance companies, mutual funds, finance companies, and investment banks, all of which are heavily regulated by the government. If an individual wanted to make a loan to IBM or General Motors, for example, he or she would not go directly to the president of the company and offer a loan. Instead, he or she would lend to such a company indirectly through **financial intermediaries**, which are institutions that borrow funds from people who have saved and in turn make loans to people who need funds.

Why are financial intermediaries so crucial to well-functioning financial markets? Why do they extend credit to one party but not to another? Why do they usually write complicated legal documents when they extend loans? Why are they the most heavily regulated businesses in the economy?

We answer these questions in Chapter 8 by developing a coherent framework for analyzing financial structure in the United States and in the rest of the world.

Banks and Other Financial Institutions

Banks are financial institutions that accept deposits and make loans. The term *banks* includes firms such as commercial banks, savings and loan associations, mutual savings banks, and credit unions. Banks are the financial intermediaries that the average person interacts with most frequently. A person who needs a loan to buy a house or a car usually obtains it from a local bank. Most Americans keep a large portion of their financial wealth in banks in the form of checking accounts, savings accounts, or other types of bank deposits. Because banks are the largest financial intermediaries in our economy, they deserve the most careful study. However, banks are not the only important financial institutions. Indeed, in recent years, other financial institutions, such as insurance companies, finance companies, pension funds, mutual funds, and investment banks, have been growing at the expense of banks, so we need to study them as well.

In Chapter 9, we examine how banks and other financial institutions manage their assets and liabilities to make profits. In Chapter 10, we extend the economic analysis in Chapter 8 to understand why financial regulation takes the form it does and what can go wrong in the regulatory process. In Chapter 11, we look at the banking industry and examine how the competitive environment has changed this industry. We also learn why some financial institutions have been growing at the expense of others.

Financial Innovation

In Chapter 11, we also study **financial innovation**, the development of new financial products and services. We will see why and how financial innovation takes place, with particular emphasis on how the dramatic improvements in information technology have led to new financial products and the ability to deliver financial services electronically through what has become known as **e-finance**. We also study financial innovation because it shows us how creative thinking on the part of financial institutions can lead to higher profits but can also sometimes result in financial disasters. By studying how financial institutions have been creative in the past, we obtain a better grasp of how they may be creative in the future. This knowledge provides us with useful clues about how the financial system may change over time.

Financial Crises

At times, the financial system seizes up and produces **financial crises**, which are major disruptions in financial markets that are characterized by sharp declines in asset prices and the failures of many financial and nonfinancial firms. Financial crises have been a feature of capitalist economies for hundreds of years and are typically followed by severe business cycle downturns. Starting in August 2007, the U.S. economy was hit by the worst financial crisis since the Great Depression. Defaults in subprime residential mortgages led to major losses in financial institutions, producing not only numerous bank failures but also the demise of Bear Stearns and Lehman Brothers, two of the largest investment banks in the United States. The crisis produced the worst economic downturn since the Great Depression, and as a result, it is now referred to as the "Great Recession."

We discuss why these crises occur and why they do so much damage to the economy in Chapter 12.

WHY STUDY MONEY AND MONETARY POLICY?

Money, also referred to as the **money supply**, is defined as anything that is generally accepted as payment for goods or services or in the repayment of debts. Money is linked to changes in economic variables that affect all of us and are important to the health of the economy. The final two parts of this book examine the role of money in the economy.

Money and Business Cycles

During 1981–1982, the total production of goods and services (called **aggregate output**) in the U.S. economy fell and the **unemployment rate** (the percentage of the available labor force unemployed) rose to over 10%. After 1982, the economy began to expand rapidly, and by 1989, the unemployment rate had declined to 5%. In 1990, the eight-year expansion came to an end, with the unemployment rate rising to above 7%. The economy bottomed out in 1991, and the subsequent recovery was the longest in U.S. history, with the unemployment rate falling to around 4%. A mild economic downturn began in March 2001, with unemployment rising to 6%; the economy began to recover in November 2001, with unemployment eventually declining to a low of 4.4%. Starting in December 2007, the economy went into a steep economic downturn and unemployment rose to over 10% before the economy slowly began to recover in June 2009. By 2017, the unemployment rate had fallen below 4½%.

Why did the economy undergo such pronounced fluctuations? Evidence suggests that money plays an important role in generating **business cycles**, the upward and downward movement of aggregate output produced in the economy. Business cycles affect all of us in immediate and important ways. When output is rising, for example, it is easier to find a good job; when output is falling, finding a good job might be difficult. Figure 3 shows the movements of the rate of growth of the money supply over the 1950–2017 period, with the shaded areas representing **recessions**, or periods of declining aggregate output. We see that the rate of money growth declined before most recessions, indicating that changes in money growth might be a driving force behind business cycle fluctuations. However, declines in the rate of money growth are often not followed by a recession.

We explore how money and monetary policy might affect aggregate output in Chapters 22 through 25 (Part 6) of this book, where we study **monetary theory**, the theory that relates the quantity of money and monetary policy to changes in aggregate economic activity and inflation.

Money and Inflation

The movie you paid $10 to see last week would have set you back only a dollar or two 30 years ago. In fact, for $10, you probably could have had dinner, seen the movie, and bought yourself a big bucket of hot buttered popcorn. As shown in Figure 4, which illustrates the movement of average prices in the U.S. economy from 1950 to 2017, the prices of most items are quite a bit higher now than they were then. The average price of goods and services in an economy is called the **aggregate price level** or, more

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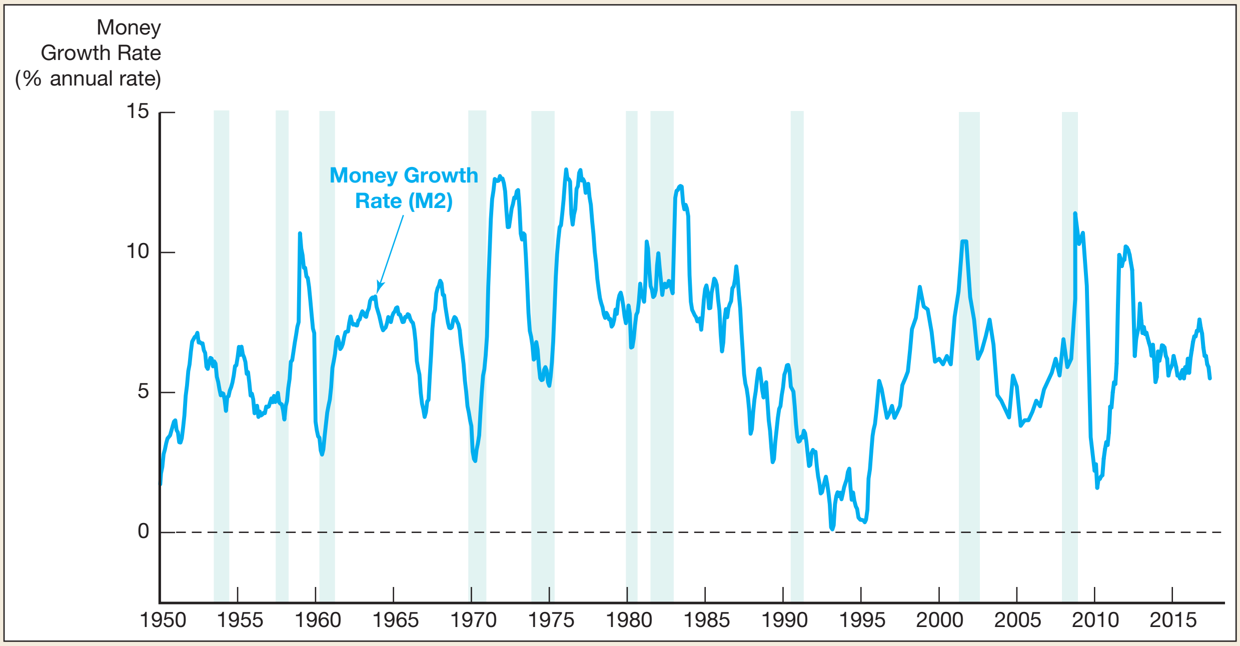

FIGURE 3 Money Growth (M2 Annual Rate) and the Business Cycle in the United States, 1950–2017

Although money growth has declined before almost every recession, not every decline in the rate of money growth is followed by a recession. Shaded areas represent recessions.

Source: **Federal Reserve Bank of St. Louis, FRED database:** https://fred.stlouisfed.org/series/M2SL

simply, the *price level* (a more precise definition is found in the appendix to this chapter). From 1960 to 2017, the price level has increased more than sixfold. **Inflation**, a continual increase in the price level, affects individuals, businesses, and the government. It is generally regarded as an important problem to be solved and is often at the top of political and policymaking agendas. To solve the inflation problem, we need to know something about its causes.

What explains inflation? One clue to answering this question is found in Figure 4, which plots the money supply versus the price level. As we can see, the price level and the money supply generally rise together. These data seem to indicate that a continuing increase in the money supply might be an important factor in causing the continuing increase in the price level that we call inflation.

Further evidence that inflation may be tied to continuing increases in the money supply is found in Figure 5, which plots the average **inflation rate** (the rate of change of the price level, usually measured as a percentage change per year) for a number of countries over the ten-year period 2006–2016 against the average rate of money growth over the same period. As you can see, a positive association exists between inflation and the growth rate of the money supply: The countries with the highest inflation rates are also the ones with the highest money growth rates. Russia and Turkey, for example, experienced high inflation during this period, and their rates of money growth were high. By contrast, Japan and the Euro area experienced low inflation rates over the same period, and their rates of money growth were low. Such evidence led Milton Friedman,

MyLab Economics Real-time data

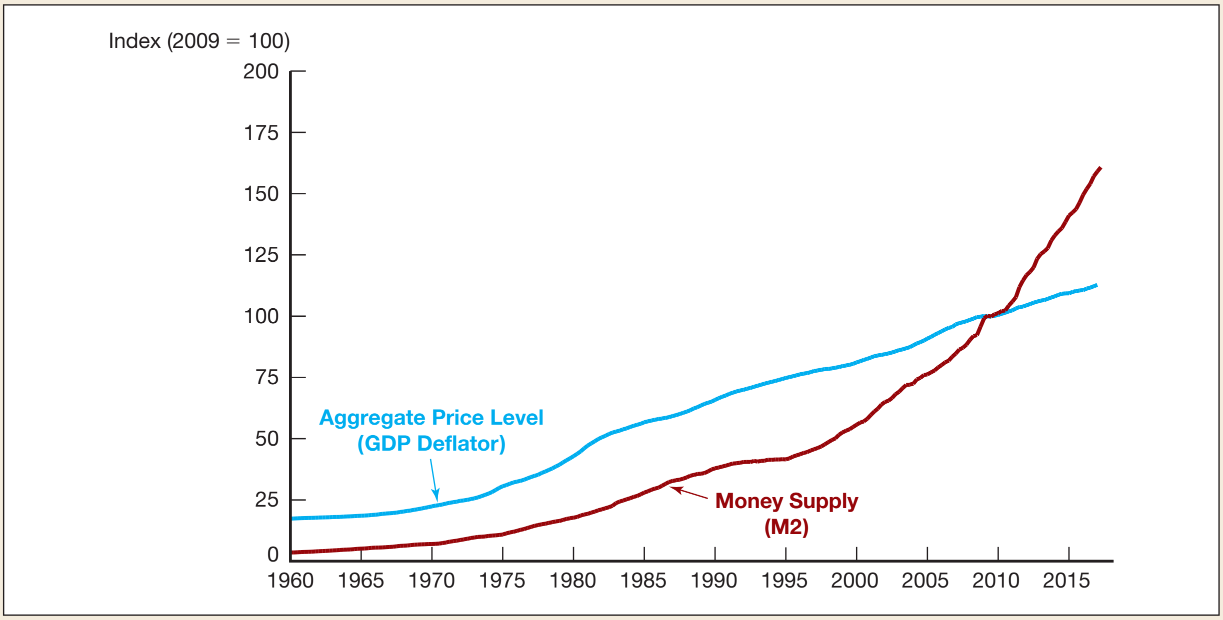

FIGURE 4 **Aggregate Price Level and the Money Supply in the United States, 1960–2017**

From 1960 to 2017, the price level has increased more than sixfold.

Source: **Federal Reserve Bank of St. Louis, FRED database:** https://fred.stlouisfed.org/series/M2SL; https://fred.stlouisfed.org/series/GDPDEF

a Nobel laureate in economics, to make the famous statement, "Inflation is always and everywhere a monetary phenomenon."[2] We look at the quantity of money and monetary policy's role in creating inflation in Chapters 22 and 24.

Money and Interest Rates

In addition to other factors, money plays an important role in interest-rate fluctuations, which are of great concern to businesses and consumers. Figure 6 shows changes in the interest rate on long-term Treasury bonds and the rate of money growth from 1950 to 2017. As the money growth rate rose in the 1960s and 1970s, the long-term bond rate rose with it. However, the relationship between money growth and interest rates has been less clear-cut since 1980. We analyze the relationship between money growth and interest rates when we examine the behavior of interest rates in Chapter 5.

Conduct of Monetary Policy

Because money affects many economic variables that are important to the well-being of our economy, politicians and policymakers throughout the world care about the conduct of **monetary policy**, the management of money and interest rates. The

[2]Milton Friedman, *Dollars and Deficits* (Upper Saddle River, NJ: Prentice Hall, 1968), p. 39.