NINTH EDITION

Financial Markets and Institutions

Frederic S. Mishkin Stanley G. Eakins

FINANCIAL MARKETS AND INSTITUTIONS

Ninth Edition

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FINANCIAL MARKETS AND INSTITUTIONS

Ninth Edition

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To My Dad

—F. S. M.

To My Wife, Laurie

—S. G. E.

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Contents in Brief

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Contents on the Web

The following updated chapters and appendices are available on our Companion Website at www.pearsonhighered.com/mishkin_eakins.

CHAPTER APPENDICES

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Preface

A Note from Frederic Mishkin

When I took leave from Columbia University in September 2006 to take a position as a member (governor) of the Board of Governors of the Federal Reserve System, I never imagined how exciting—and stressful—the job was likely to be. How was I to know that, as Alan Greenspan put it, the world economy would be hit by a "once-in-a-century credit tsunami," the global financial crisis of 2007–2009? When I returned to Columbia in September 2008, the financial crisis had reached a particularly virulent stage, with credit markets completely frozen and some of our largest financial institutions in very deep trouble. The global financial crisis, which has been the worst financial crisis the world has experienced since the Great Depression, has completely changed the nature of financial markets and institutions.

Given what has happened, the study of financial markets and institutions has become particularly exciting. I hope that students reading this book will have as much fun learning from it as we have had in writing it.

August 2016

What's New in the Ninth Edition

In addition to the expected updating of all data through 2016 whenever possible, there is major new material in every part of the text.

New Material on Financial Markets and Institutions

In light of ongoing research and changes in financial markets and institutions, we have added the following material to keep the text current:

- A new section on hedge funds (Chapter 2)
- An updated Mini-Case box on negative interest rates in the United States, Europe, and Japan (Chapter 3)
- An updated case on explaining low interest rates in Europe, Japan, and the United States (Chapter 4)
- A new Mini-Case box on the tyranny of collateral (Chapter 7)

- A new section describing securitization and the shadow banking system (Chapter 19)

New Material on Monetary Policy

In the aftermath of the global financial crisis, there have been major changes in the way central banks conduct monetary policy. This has involved the following new material.

- An updated Inside the Fed box on how Janet Yellen's style differs from former Federal Reserve chairs (Chapter 9)
- An updated Inside the Fed box on the evolution of the Fed's communication strategy (Chapter 9)
- A new section on how Federal Reserve actions affect reserves in the banking system (Chapter 10)
- An updated section on forward guidance (Chapter 10)
- A new section on the policy tool, negative interest rates on bank deposits at central banks (Chapter 10)

Appendices on the Web

The Web site for this book, **www.pearsonhighered.com/mishkin_eakins**, has allowed us to retain and add new material for the book by posting content online. The appendices include:

Chapter 4: Models of Asset Pricing

Chapter 4: Applying the Asset Market Approach to a Commodity Market: The Case of Gold

Chapter 4: Loanable Funds Framework

Chapter 4: Supply and Demand in the Market for Money: The Liquidity Preference Framework

Chapter 18: Banking Crises Throughout the World

Chapter 24: More on Hedging with Financial Derivatives

Instructors can either use these appendices in class to supplement the material in the textbook or recommend them to students who want to expand their knowledge of the financial markets and institutions field.

Hallmarks

Although this text has undergone a major revision, it retains the basic hallmarks that make it the best-selling textbook on financial markets and institutions. The ninth edition of *Financial Markets and Institutions* is a practical introduction to the workings of today's financial markets and institutions. Moving beyond the descriptions and definitions provided by other textbooks in the field, *Financial Markets and Institutions* encourages students to understand the connection between the theoretical concepts and their real-world applications. By enhancing students' analytical abilities and concrete problem-solving skills, this textbook prepares students

for successful careers in the financial services industry or successful interactions with financial institutions, whatever their jobs.

To prepare students for their future careers, *Financial Markets and Institutions* provides the following features:

- A unifying analytic framework that uses a few basic principles to organize students' thinking. These principles include:
  - Asymmetric information (agency) problems
  - Conflicts of interest
  - Transaction costs
  - Supply and demand
  - Asset market equilibrium
  - Efficient markets
  - Measurement and management of risk
- "The Practicing Manager" sections include nearly 20 hands-on applications that emphasize the financial practitioner's approach to financial markets and institutions.
- A careful step-by-step development of models enables students to master the material more easily.
- A high degree of flexibility allows professors to teach the course in the manner they prefer.
- International perspectives are completely integrated throughout the text.
- "Following the Financial News" is a feature that encourages the reading of a financial newspaper.
- Numerous cases increase students' interest by applying theory to real-world data and examples.
- The text focuses on the impact of electronic (computer and telecommunications) technology on the financial system. The text makes extensive use of the Internet with Web exercises, Web sources for charts and tables, and Web references in the margins. It also features special "E-Finance" boxes that explain how changes in technology have affected financial markets and institutions.

Flexibility

There are as many ways to teach financial markets and institutions as there are instructors. Thus, there is a great need to make a textbook flexible in order to satisfy the diverse needs of instructors, and that has been a primary objective in writing this book. This textbook achieves this flexibility in the following ways:

- Core chapters provide the basic analysis used throughout the book, and other chapters or sections of chapters can be assigned 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, an instructor can decide to teach a more detailed treatment of financial structure and financial crises using chapters in Part 3 of the text, or cover specific chapters on financial markets or financial institutions in Parts 4 or 5 of the text, or the instructor can skip these chapters and take any of a number of different paths.

- The approach to internationalizing the text using separate, marked international sections within chapters and 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 choose not to. Instructors who want less emphasis on international topics can easily skip Chapter 15 (on the foreign exchange market) and Chapter 16 (on the international financial system).
- "The Practicing Manager" applications, as well as Part 7 on the management of financial institutions, are self-contained and so can be skipped without loss of continuity. Thus, an instructor wishing to teach a less managerially oriented course, who might want to focus on public policy issues, will have no trouble doing so. Alternatively, Part 7 can be taught earlier in the course, immediately after Chapter 17 on bank management.

The course outlines listed next for a semester teaching schedule illustrate how this book can be used for courses with a different emphasis. More detailed information about how the text can offer flexibility in your course is available in the *Instructor's Manual*.

Financial markets and institutions emphasis: Chapters 1–5, 7–8, 11–13, 17–19, and a choice of five other text chapters
Financial markets and institutions with international emphasis: Chapters 1–5, 7–8, 11–13, 15–19, and a choice of three other text chapters
Managerial emphasis: Chapters 1–5, 17–19, 23–24, and a choice of eight other text chapters
Public policy emphasis: Chapters 1–5, 7–10, 17–18, and a choice of seven other text chapters

Pedagogical Aids

A textbook must be a solid motivational tool. To this end, we have incorporated a wide variety of pedagogical features.

1. **Chapter Previews** at the beginning of each chapter tell students where the chapter is heading, why specific topics are important, and how they relate to other topics in the book.
2. **Cases** demonstrate how the analysis in the book can be used to explain many important real-world situations.
3. **"The Practicing Manager"** is a set of special cases that introduce students to real-world problems that managers of financial institutions have to solve.
4. **Numerical Examples** guide students through solutions to financial problems using formulas, time lines, and calculator key strokes.
5. **"Following the Financial News" boxes** introduce students to relevant news articles and data that are reported daily in financial news sources and explain how to read them.
6. **"Inside the Fed" boxes** give students a feel for what is important in the operation and structure of the Federal Reserve System.
7. **"Global" boxes** include interesting material with an international focus.
8. **"E-Finance" boxes** relate how changes in technology have affected financial markets and institutions.

9. **"Conflicts of Interest" boxes** outline conflicts of interest in different financial service industries.
10. **"Mini-Case" boxes** highlight dramatic historical episodes or apply the theory to the data.
11. **Summary Tables** are useful study aids for reviewing material.
12. **Key Statements** are important points that are set in boldface type so that students can easily find them for later reference.
13. **Graphs** with captions, numbering over 60, help students understand the interrelationship of the variables plotted and the principles of analysis.
14. **Summaries** at the end of each chapter list the chapter's main points.
15. **Key Terms** are important words or phrases that appear in boldface type when they are defined for the first time and are listed at the end of each chapter.
16. **End-of-Chapter Questions** help students learn the subject matter by applying economic concepts and feature a special class of questions that students find particularly relevant, titled "Predicting the Future."
17. **End-of-Chapter Quantitative Problems**, numbering over 250, help students to develop their quantitative skills.
18. **Web Exercises** encourage students to collect information from online sources or use online resources to enhance their learning experience.
19. **Web Sources** report the URL source of the data used to create the many tables and charts.
20. **Marginal Web References** point the student to Web sites that provide information or data that supplement the text material.
21. **Glossary** at the back of the book defines all the key terms.
22. **Full Solutions to the Questions and Quantitative Problems** appear in the *Instructor's Manual* and on the Instructor's Resource Center at **www.pearsonhighered.com/irc**. Professors have the flexibility to share the solutions with their students as they see fit.

Supplementary Materials

The ninth edition of *Financial Markets and Institutions* includes the most comprehensive program of supplementary materials of any textbook in its field. These items are available to qualified domestic adopters but in some cases may not be available to international adopters. These include the following items:

For the Professor

The demands for good teaching at business schools have increased dramatically in recent years. To meet these demands, the ninth edition of *Financial Markets and Institutions* includes the most comprehensive program of supplementary materials of any textbook in its field that should make teaching the course substantially easier. These resources are available at **www.pearsonhighered.com/irc**.

1. **Instructor's Manual:** This manual, prepared by the authors, includes chapter outlines, overviews, teaching tips, and complete solutions to questions and problems in the text.
2. **PowerPoint:** Prepared by John Banko (University of Florida). The presentation, which contains lecture notes and the complete set of figures and tables from

the textbook, contains more than 1,000 slides that comprehensively outline the major points covered in the text.

3. **Test Bank:** Updated and revised for the ninth edition, the Test Bank comprises over 2,500 multiple-choice, true-false, and essay questions. All of the questions from the Test Bank are available in computerized format for use in the TestGen software. The TestGen software is available for both Windows and Macintosh systems.
4. **Mishkin/Eakins Companion Website** (**www.pearsonhighered.com/mishkin_eakins**) features Web chapters on financial crises in emerging economies, savings associations and credit unions, and another on finance companies, Web appendices, and links to relevant data sources and Federal Reserve Web sites.

For the Student

1. **Study Guide:** Updated and revised for the ninth edition by William Gerken, the Study Guide offers chapter summaries, exercises, self-tests, and answers to the exercises and self-tests.
2. **Mishkin/Eakins Companion Website** (**www.pearsonhighered.com/mishkin_eakins**) includes Web chapters on financial crises in emerging economies, savings associations and credit unions, and another on finance companies, Web appendices, glossary flash cards, and links from the textbook.

Acknowledgments

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Stanley G. Eakins

About the Authors

Frederic S. Mishkin is the Alfred Lerner Professor of Banking and Financial Institutions at the Graduate School of Business, Columbia University. From September 2006 to August 2008, he was a member (governor) of the Board of Governors of the Federal Reserve System.

He is also a research associate at the National Bureau of Economic Research and past president of the Eastern Economics Association. Since receiving his Ph.D. from the Massachusetts Institute of Technology in 1976, he has taught at the University of Chicago, Northwestern University, Princeton University, and Columbia University. He has also received an honorary professorship from the People's (Renmin) University of China. From 1994 to 1997, he was executive vice president and director of research at the Federal Reserve Bank of New York and an associate economist of the Federal Open Market Committee of the Federal Reserve System.

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 20 books, including *Macroeconomics: Policy and Practice, Second Edition* (Pearson, 2015); *The Economics of Money, Banking and Financial Markets*, Eleventh Edition (Pearson, 2016); *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*, *Journal of Applied Econometrics*, *Journal of Economic Perspectives*, and *Journal of Money Credit and Banking*.

Professor Mishkin has served on the editorial board of the *American Economic Review* and has been an associate editor at the *Journal of Business and Economic Statistics*, *Journal of Applied Econometrics*, *Journal of Economic Perspectives*, *Journal of Money, Credit and Banking*, and *Journal of International Money and Finance*; 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*; *Emerging Markets, Finance and Trade*; *Review of Development Finance*, *Borsa Economic Review*, and *PSU Research Review.* He has served as a senior fellow to at the Federal Deposit Insurance Corporation's Center for Banking Research and 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 adviser to the Institute for Monetary and Economic Research at the Bank of Korea. He is currently a member of the Economic Advisory Panel and the Monetary Policy Advisory Panel of the Federal Reserve Bank of New York.

Stanley G. Eakins has notable experience as a financial practitioner, serving as vice president and comptroller at the First National Bank of Fairbanks and as a commercial and real estate loan officer. A founder of the Denali Title and Escrow Agency, a title insurance company in Fairbanks, Alaska, he also ran the operations side of a bank and was the chief finance officer for a multimillion-dollar construction and development company.

Professor Eakins received his Ph.D. from Arizona State University. He is the Dean for the College of Business at East Carolina University. His research is focused primarily on the role of institutions in corporate control and how they influence investment practices. He is also interested in integrating multimedia tools into the learning environment and has received grants from East Carolina University in support of this work.

A contributor to journals such as the *Quarterly Journal of Business and Economics*, the *Journal of Financial Research*, and the *International Review of Financial Analysis*, Professor Eakins is also the author of *Corporate Finance Online (CFO)* (Pearson, 2018), a multimedia online text designed from the ground up for electronic delivery.

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CHAPTER 1

Why Study Financial Markets and Institutions?

PREVIEW

On the evening news you have just heard that the bond market has been booming. Does this mean that interest rates will fall so that it is easier for you to finance the purchase of a new computer system for your small retail business? Will the economy improve in the future so that it is a good time to build a new building or add to the one you are in? Should you try to raise funds by issuing stocks or bonds, or instead go to the bank for a loan? If you import goods from abroad, should you be concerned that they will become more expensive?

This book provides answers to these 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. Financial markets and institutions not only affect your everyday life but also involve huge flows of funds—trillions of dollars—throughout our economy, which in turn affect 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 and institutions is of great concern to politicians and can even have a major impact on elections. The study of financial markets and institutions will reward you with an understanding of many exciting issues. In this chapter we provide a road map of the book by outlining these exciting issues and exploring why they are worth studying.

Why Study Financial Markets?

Parts 2 and 5 of this book focus 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 direct effects 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 payments periodically for a specified period of time.[1] Debt markets, also often referred to generically as the *bond* market, are especially important to economic activity because they enable corporations and governments to borrow in order to finance their activities; the bond market is also 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 types of bonds.

http://research.stlouisfed.org/fred2/

The Federal Reserve Bank of St. Louis' FRED database provides access to daily, weekly, monthly, quarterly, and annual releases and historical data for selected interest rates, foreign exchange rates, and other economic statistics.

Interest rates are important on a number of levels. On a personal level, high interest rates could deter you from buying a house or a car because the cost of financing it would be high. Conversely, high interest rates could 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 have important effects on individuals, financial institutions, businesses, and the overall economy, it is important to explain fluctuations in interest rates that have been substantial over the past 35 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, and then rose to above 5% in the mid to late 1990s. It then fell below 1% in 2004, rose to 5% by 2007, only to fall close to zero from 2008 to 2016.

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 1.1

[1]The definition of *bond* used throughout this book is the broad one in common use by academics, 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.

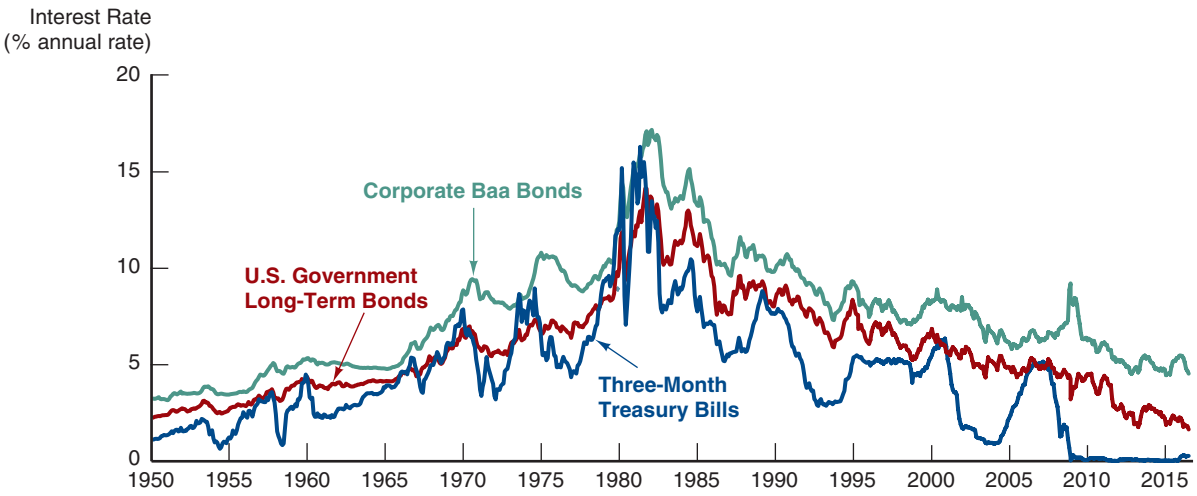

FIGURE 1.1 Interest Rates on Selected Bonds, 1950–2016

Although different interest rates have a tendency to move in unison, they do 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.

shows, however, interest rates on various 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, or difference, between it and U.S. government long-term bonds became larger in the 1970s, narrowed in the 1990s and particularly in the middle 2000s, only to surge to extremely high levels during the global financial crisis of 2007–2009 before narrowing again.

In Chapters 2, 11, 12, and 14 we study the role of debt markets in the economy, and in Chapters 3 through 5 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 just called 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 is often called simply "the market." A 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—quickly.

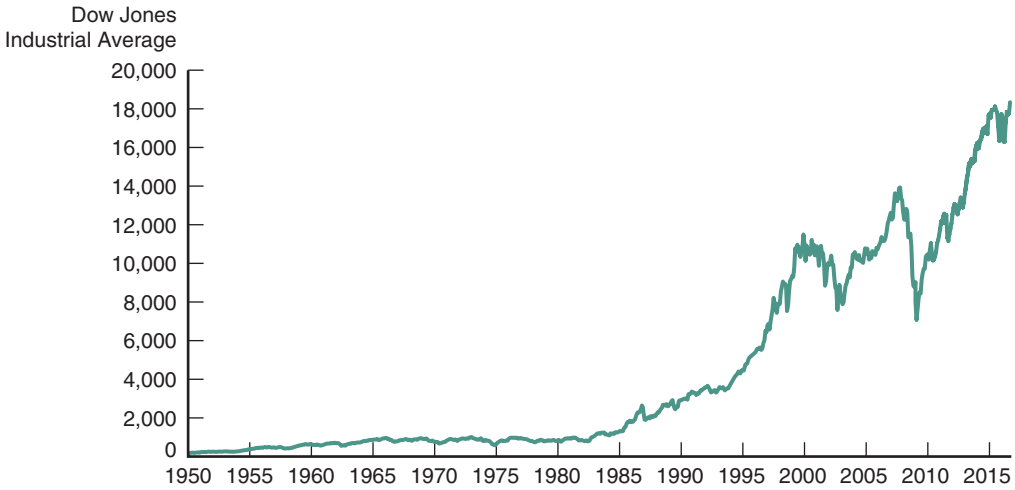

FIGURE 1.2 Stock Prices as Measured by the Dow Jones Industrial Average, 1950–2016

Stock prices are extremely volatile.

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

As Figure 1.2 indicates, stock prices are extremely volatile. After the market rose in the 1980s, on "Black Monday," October 19, 1987, it experienced the worst one-day drop in its entire history, with the Dow Jones Industrial Average (DJIA) falling by 22%. From then until 2000, the stock market experienced one of the great bull markets 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 above the 14,000 level in 2007, only to fall by over 50% of its value to a low below 7,000 in 2009. Then another bull market began, with the Dow rising above the 18,000 level in 2016. These considerable fluctuations in stock prices affect the size of people's wealth and as a result may affect 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 it can raise a larger amount of funds, which can be used to buy production facilities and equipment.

In Chapter 2 we examine the role that the stock market plays in the financial system, and we return to the issue of how stock prices behave and respond to information in the marketplace in Chapters 6 and 13.

The Foreign Exchange Market

For funds to be transferred from one country to another, they have to be converted from the currency in the country of origin (say, dollars) into the currency of the country they are going to (say, euros). The **foreign exchange market** is where

this conversion takes place, so it is instrumental in moving funds between countries. It is also important because it is where the **foreign exchange rate**, the price of one country's currency in terms of another's, is determined.

Figure 1.3 shows the exchange rate for the U.S. dollar from 1973 to 2016 (measured as the value of the U.S. dollar in terms of a basket of major foreign currencies). The fluctuations in prices in this market have also been substantial: The dollar's value reached a low point in the 1978–1980 period and then appreciated dramatically until early 1985. It then declined again, reaching another low in 1995, but appreciated from 1995 to 2001. From 2001 to 2008, the dollar depreciated substantially. After a temporary upturn in 2008 and 2009, the dollar fell back down, but then appreciated from mid-2014 to 2016.

What have these fluctuations in the exchange rate meant to the American public and businesses? A change in the exchange rate has a direct effect on American consumers because it affects the cost of imports. In 2001, when the euro was worth around 85 cents, 100 euros of European goods (say, French wine) cost $85. When the dollar subsequently weakened, raising the cost of a euro to $1.50, the same 100 euros of wine now cost $150. Thus, a weaker dollar leads to more expensive foreign goods, makes vacationing abroad more expensive, and raises the cost of indulging your desire for imported delicacies. When the value of the dollar drops, Americans decrease their purchases of foreign goods and increase their consumption of domestic goods (such as travel in the United States or American-made wine).

Conversely, a strong dollar means that U.S. goods exported abroad will cost more in foreign countries, and hence foreigners will buy fewer of them. Exports of steel, for example, declined sharply when the dollar strengthened in the 1980–1985 and 1995–2001 periods. A strong dollar benefited American consumers by making foreign goods cheaper but hurt American businesses and eliminated some jobs by cutting both domestic and foreign sales of their products. The decline in the value of the dollar from 1985 to 1995 and from 2001 to 2014 had the opposite effect: It

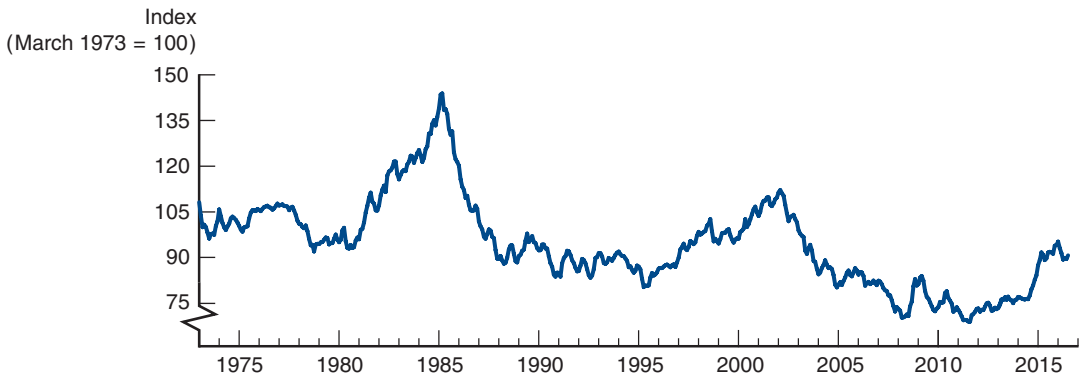

FIGURE 1.3 Exchange Rate of the U.S. Dollar, 1973–2016

The value of the U.S. dollar relative to other currencies has fluctuated substantially over the years.

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

made foreign goods more expensive but made American businesses more competitive. Fluctuations in the foreign exchange markets thus have major consequences for the American economy.

In Chapter 15 we study how exchange rates are determined in the foreign exchange market, in which dollars are bought and sold for foreign currencies.

Why Study Financial Institutions?

The second major focus of this book is financial institutions. 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. Financial institutions thus play a crucial role in improving the efficiency of the economy.

Structure of the Financial System

The financial system is complex, comprising many 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 you wanted to make a loan to Apple or Amazon, for example, you would not go directly to the president of the company and offer a loan. Instead, you would lend to such companies indirectly through **financial intermediaries**, institutions such as commercial banks, savings and loan associations, mutual savings banks, credit unions, insurance companies, mutual funds, pension funds, and finance companies that borrow funds from people who have saved and in turn make loans to others.

Why are financial intermediaries so crucial to well-functioning financial markets? Why do they give 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 by developing a coherent framework for analyzing financial structure both in the United States and in the rest of the world in Chapter 7.

Financial Crises

At times, the financial system seizes up and produces **financial crises**, 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 the most serious business cycle downturns. From 2007 to 2009, 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, not only producing numerous bank failures but also leading to the demise of Bear Stearns and Lehman Brothers, two of the largest investment banks in the United States. The result of the crisis was the worst recession since World War II, which is now referred to as the "Great Recession."

Why these crises occur and why they do so much damage to the economy is discussed in Chapter 8.

Central Banks and the Conduct of Monetary Policy

GO ONLINE
www.federalreserve.gov
Access general information as well as monetary policy, banking system, research, and economic data of the Federal Reserve.

The most important financial institution in the financial system is the **central bank**, the government agency responsible for the conduct of monetary policy, which in the United States is the **Federal Reserve System** (also called simply **the Fed**). **Monetary policy** involves the management of interest rates and the quantity of **money**, also referred to as the **money supply** (defined as anything that is generally accepted in payment for goods and services or in the repayment of debt). Because monetary policy affects interest rates, inflation, and business cycles, all of which have a major impact on financial markets and institutions, we study how monetary policy is conducted by central banks in both the United States and abroad in Chapters 9 and 10.

The International Financial System

The tremendous increase in capital flows between countries means that the international financial system has a growing impact on domestic economies. Whether a country fixes its exchange rate to that of another is an important determinant of how monetary policy is conducted. Whether there are capital controls that restrict mobility of capital across national borders has a large effect on domestic financial systems and the performance of the economy. What role international financial institutions such as the International Monetary Fund should play in the international financial system is very controversial. All of these issues are explored in Chapter 16.

Banks and Other Financial Institutions

Banks are financial institutions that accept deposits and make loans. Included under the term *banks* are 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 proportion 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 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, and so we need to study them as well. We study banks and all these other institutions in Parts 6 and 7.

Financial Innovation

In the good old days, when you took cash out of the bank or wanted to check your account balance, you got to say hello to a friendly human. Nowadays, you are more likely to interact with an automatic teller machine (ATM) when withdrawing cash and to use your home computer to check your account balance. **Financial innovation**, the development of new financial products and services, can be an important force for good by making the financial system more efficient. Unfortunately, as we will see in Chapter 8, financial innovation can have a dark side: It can lead to

devastating financial crises, such as the one experienced from 2007 to 2009. In Chapter 19 we study 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, in 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 sometimes result in financial disasters. By seeing how and why 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 and will help keep our understanding about banks and other financial institutions from becoming obsolete.

Managing Risk in Financial Institutions

In the past ten years, the economic environment has become an increasingly risky place. Interest rates fluctuated wildly, stock markets crashed both here and abroad, speculative crises occurred in the foreign exchange markets, and failures of financial institutions reached levels unprecedented since the Great Depression. To avoid wild swings in profitability (and even possibly failure) resulting from this environment, financial institutions must be concerned with how to cope with increased risk. We look at techniques that these institutions use when they engage in risk management in Chapter 23. Then in Chapter 24, we look at how these institutions make use of new financial instruments, such as financial futures, options, and swaps, to manage risk.

Applied Managerial Perspective

Another reason for studying financial institutions is that they are among the largest employers in the country and frequently pay very high salaries. Hence, some of you have a very practical reason for studying financial institutions: It may help you get a good job in the financial sector. Even if your interests lie elsewhere, you should still care about how financial institutions are run because there will be many times in your life, as an individual, an employee, or the owner of a business, when you will interact with these institutions. Knowing how financial institutions are managed may help you get a better deal when you need to borrow from them or if you decide to supply them with funds.

This book emphasizes an applied managerial perspective in teaching you about financial markets and institutions by including special case applications headed "The Practicing Manager." These cases introduce you to the real-world problems that managers of financial institutions commonly face and need to solve in their day-to-day jobs. For example, how does the manager of a financial institution come up with a new financial product that will be profitable? How does a manager of a financial institution manage the risk that the institution faces from fluctuations in interest rates, stock prices, or foreign exchange rates? Should a manager hire an expert on Federal Reserve policy making, referred to as a "Fed watcher," to help the institution discern where monetary policy might be going in the future?

Not only do "The Practicing Manager" cases, which answer these questions and others like them, provide you with some special analytic tools that you will need if you make your career at a financial institution, but they also give you a feel for what a job as the manager of a financial institution is all about.

How We Will Study Financial Markets and Institutions

Instead of focusing on a mass of dull facts that will soon become obsolete, this textbook emphasizes a unifying, analytic framework for studying financial markets and institutions. This framework uses a few basic concepts to help organize your thinking about the determination of asset prices, the structure of financial markets, bank management, and the role of monetary policy in the economy. The basic concepts are equilibrium, basic supply and demand analysis to explain behavior in financial markets, the search for profits, and an approach to financial structure based on transaction costs and asymmetric information.

The unifying framework used in this book will keep your knowledge from becoming obsolete and make the material more interesting. It will enable you to learn what *really* matters without having to memorize material that you will forget soon after the final exam. This framework will also provide you with the tools needed to understand trends in the financial marketplace and in variables such as interest rates and exchange rates.

To help you understand and apply the unifying analytic framework, simple models are constructed throughout the text in which the variables held constant are carefully delineated, each step in the derivation of the model is clearly and carefully laid out, and the models are then used to explain various phenomena by focusing on changes in one variable at a time, holding all other variables constant.

To reinforce the models' usefulness, this text also emphasizes the interaction of theoretical analysis and empirical data in order to expose you to real-life events and data. To make the study of financial markets and institutions even more relevant and to help you learn the material, the book contains, besides "The Practicing Manager" cases, numerous additional cases and mini-cases that demonstrate how you can use the analysis in the book to explain many real-world situations.

To function better in the real world outside the classroom, you must have the tools to follow the financial news that appears in leading financial publications and on the Web. To help and encourage you to read the financial section of the newspaper, this book contains two special features. The first is a set of special boxed inserts titled "Following the Financial News" that provide detailed information and definitions you need to evaluate the data that are discussed frequently in the media. This book also contains nearly 400 end-of-chapter questions and problems that ask you to apply the analytic concepts you have learned to other real-world issues. Particularly relevant is a special class of problems headed "Predicting the Future." These questions give you an opportunity to review and apply many of the important financial concepts and tools presented throughout the book.

Exploring the Web

The World Wide Web has become an extremely valuable and convenient resource for financial research. We emphasize the importance of this tool in several ways. First, wherever we use the Web to find information to build the charts and tables that appear throughout the text, we include the source site's URL. These sites often contain additional information and are updated frequently. Second, we have added Web exercises to the end of each chapter. These exercises prompt you to visit sites related to the chapter and to work with real-time data and information. We have also supplied Web references to the end of the chapter that list the URLs

of sites related to the material being discussed. Visit these sites to further explore a topic you find of particular interest. Web site URLs are subject to frequent change. We have tried to select stable sites, but we realize that even government URLs change. The publisher's Web site (www.pearsonhighered.com/mishkin_eakins) will maintain an updated list of current URLs for your reference.

Collecting and Graphing Data

The following Web exercise is especially important because it demonstrates how to export data from a Web site into Microsoft Excel for further analysis. We suggest you work through this problem on your own so that you will be able to perform this activity when prompted in subsequent Web exercises whenever you want to collect data from the Web and apply it to particular situations.

Web Exercise

You have been hired by Risky Ventures, Inc., as a consultant to help the company analyze interest-rate trends from the beginning of 2015 to the present. Your employers are initially interested in determining the relationship between long- and short-term interest rates in that year. The biggest task you must immediately undertake is collecting market interest-rate data. You know the best source of this information is the Web.

1. You decide that your best indicator of long-term interest rates is that on a 10-year U.S. Treasury note. Your first task is to gather historical data. Go to the Federal Reserve Bank of St. Louis, FRED database, at http://research.stlouisfed.org/fred2/, a terrific resource for economic data. In the search box in the upper right corner, type in "10-year," and then click on "10-Year Treasury Constant Maturity Rate" in the drop down box. The site should look like Figure 1.4.
2. Now that you have located an accurate source of historical interest-rate data, the next step is choosing the sample period and getting it onto a spreadsheet. Check "monthly" under "10-year Treasury Constant Maturity Rate." Change the beginning observation date to 2015, January. Now click on "Edit Graph" and then click on "Add Line." Type in "1-year" in the "Add data series in the graph" box and hit Enter. Click on "1-Year Treasury Constant Maturity Rate: Monthly" and click on "Add Series." Click on "Download" and then on "Excel (data)." Click on "fedgraph.xls" at the bottom and you will now see Figure 1.5.
3. You now want to analyze the interest rates by first graphing them. Put headings such as "10-Year Interest Rate" and "1-Year Interest Rate" at the top of each column of data. Highlight the two columns of interest-rate data you just created in Excel, including the headings. Click on "Insert" on the toolbar and then click on the "Insert Line Chart" icon and the first 2-D Line. Put labels in column A: "Average" and "Standard deviation." In the same row as you put the label "Average," in columns B and C, click on the f_x icon on the Excel toolbar, then click on "AVERAGE" in the Insert Function box and click "OK." Highlight the dates for each of the series from January 2015 to the present and click "OK." In the same row as you put the label "Standard deviation,"

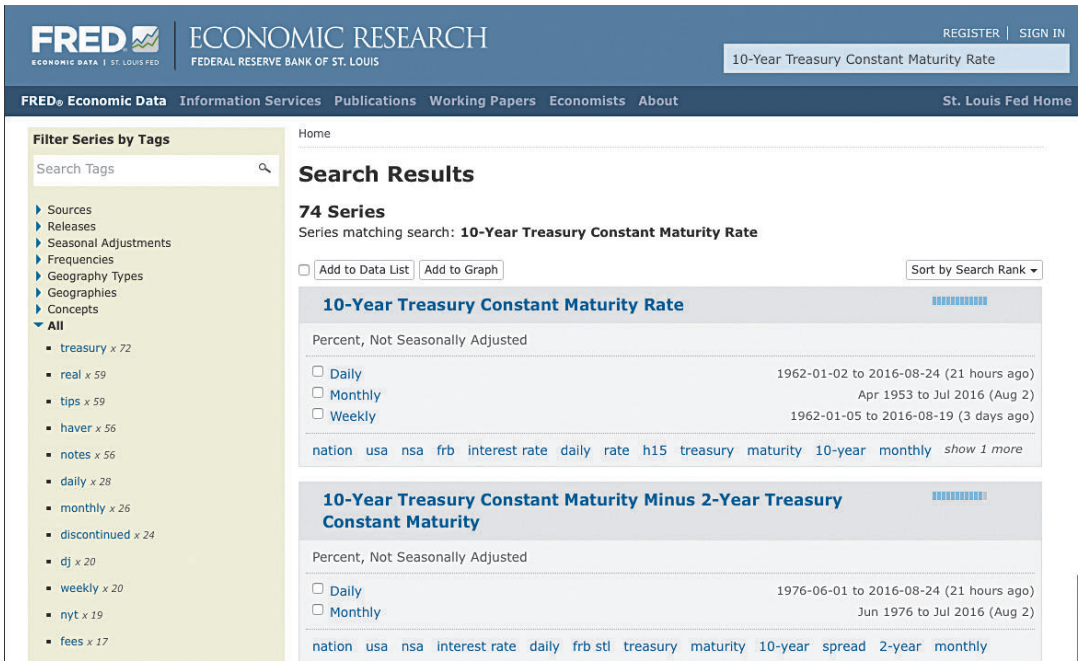

FIGURE 1.4 Federal Reserve Bank of St. Louis, FRED Database

Source: https://fred.stlouisfed.org/series/GS10.

	A	B	C	D	E
1	FRED Graph Observations				
2	Federal Reserve Economic Data				
3	Link: https://fred.stlouisfed.org				
4	Help: https://fred.stlouisfed.org/help-faq				
5	Economic Research Division				
6	Federal Reserve Bank of St. Louis				
7					
8	GS10	10-Year Treasury Constant Maturity Rate, Percent, Monthly, Not Seasonally Adjusted			
9	GS1	1-Year Treasury Constant Maturity Rate, Percent, Monthly, Not Seasonally Adjusted			
10					
11	Frequency: Monthly				
12	observation_date	GS10	GS1		
13	2015-01-01	1.88	0.20		
14	2015-02-01	1.98	0.22		
15	2015-03-01	2.04	0.25		
16	2015-04-01	1.94	0.23		
17	2015-05-01	2.20	0.24		
18	2015-06-01	2.36	0.28		
19	2015-07-01	2.32	0.30		
20	2015-08-01	2.17	0.38		
21	2015-09-01	2.17	0.37		
22	2015-10-01	2.07	0.26		
23	2015-11-01	2.26	0.48		
24	2015-12-01	2.24	0.65		
25	2016-01-01	2.09	0.54		
26	2016-02-01	1.78	0.53		
27	2016-03-01	1.89	0.66		
28	2016-04-01	1.81	0.56		
29	2016-05-01	1.81	0.59		
30	2016-06-01	1.64	0.55		
31	2016-07-01	1.50	0.51		
32					

FIGURE 1.5 Excel Spreadsheet with Interest-Rate Data

Source: Used with permission from Microsoft Corporation; https://fred.stlouisfed.org/series/GS1; https://fred.stlouisfed.org/series/GS10.

	A	B	C
1	FRED Graph Observations		
2	Federal Reserve Economic Data		
3	Link: https://fred.stlouisfed.org		
4	Help: https://fred.stlouisfed.org/help-faq		
5	Economic Research Division		
6	Federal Reserve Bank of St. Louis		
7			
8	GS10	10-Year Treasury Constant Maturity Rate, Percent, Monthly, Not Seasonally Adjusted	
9	GS1	1-Year Treasury Constant Maturity Rate, Percent, Monthly, Not Seasonally Adjusted	
10			
11	Frequency: Monthly		
12	observation_date	10-Year Interest Rate	1-Year Interest Rate
13	2015-01-01	1.88	0.20
14	2015-02-01	1.98	0.22
15	2015-03-01	2.04	0.25
16	2015-04-01	1.94	0.23
17	2015-05-01	2.20	0.24
18	2015-06-01	2.36	0.28
19	2015-07-01	2.32	0.30
20	2015-08-01	2.17	0.38
21	2015-09-01	2.17	0.37
22	2015-10-01	2.07	0.26
23	2015-11-01	2.26	0.48
24	2015-12-01	2.24	0.65
25	2016-01-01	2.09	0.54
26	2016-02-01	1.78	0.53
27	2016-03-01	1.89	0.66
28	2016-04-01	1.81	0.56
29	2016-05-01	1.81	0.59
30	2016-06-01	1.64	0.55
31	2016-07-01	1.50	0.51
32			
33	Average	2.01	0.41
34	Standard Deviation	0.235598032	0.160189946
35			
36			
37			

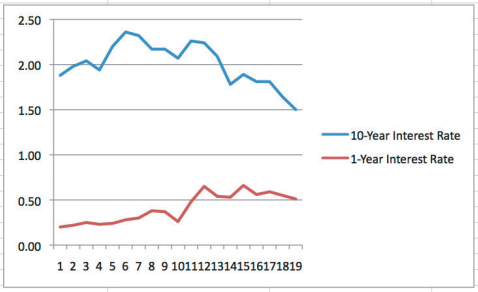

FIGURE 1.6 Excel Graph of Interest-Data

Source: Used with permission from Microsoft Corporation.

in columns B and C, click on the f_x icon on the Excel toolbar, then click on "STDEV" in the Insert Function box and click "OK." Highlight the dates for each of the series from January 2015 to the present and click "OK." You should now see Figure 1.6.

Concluding Remarks

The field of financial markets and institutions is an exciting one. Not only will you develop skills that will be valuable in your career, but you will also gain a clearer understanding of events in financial markets and institutions you frequently hear about in the news media. This book will introduce you to many of the controversies that are hotly debated in the current political arena.

SUMMARY

1. Activities in financial markets have direct effects on individuals' wealth, the behavior of businesses, and the efficiency of our economy. Three financial markets deserve particular attention: the bond market (where interest rates are determined), the stock market (which has a major effect on people's wealth and on firms' investment decisions), and the foreign exchange market (because fluctuations in the foreign exchange rate have major consequences for the U.S. economy).

2. Because monetary policy affects interest rates, inflation, and business cycles, all of which have an important impact on financial markets and institutions, we need to understand how monetary policy is conducted by central banks in the United States and abroad.
3. Banks and other financial institutions channel funds from people who might not put them to productive use to people who can do so and thus play a crucial role in improving the efficiency of the economy. When the financial system seizes up and produces a financial crisis, financial firms fail, which causes severe damage to the economy.
4. Understanding how financial institutions are managed is important because there will be many times in your life, as an individual, an employee, or the owner of a business, when you will interact with them. "The Practicing Manager" cases not only provide special analytic tools that are useful if you choose a career with a financial institution but also give you a feel for what a job as the manager of a financial institution is all about.
5. This textbook emphasizes an analytic way of thinking by developing a unifying framework for the study of financial markets and institutions using a few basic principles. This textbook also focuses on the interaction of theoretical analysis and empirical data.

KEY TERMS

assets, p. 2
banks, p. 7
bond, p. 2
central bank, p. 7
common stock (stock), p. 3
e-finance, p. 8
Federal Reserve System (the Fed), p. 7
financial crises, p. 6
financial innovation, p. 7
financial intermediaries, p. 6
financial markets, p. 2
foreign exchange market, p. 4
foreign exchange rate, p. 5
interest rate, p. 2
monetary policy, p. 7
money (money supply), p. 7
security, p. 2

QUESTIONS

1. Explain the link between well-performing financial markets and economic growth. Name one channel through which financial markets might affect economic growth and poverty.
2. When interest rates rise, how might businesses and consumers change their economic behavior?
3. How can a change in interest rates affect the profitability of financial institutions?
4. Why is it that economists often refer to "the" interest rate, while there are many interest rates in any economy?
5. What effect might a fall in stock prices have on business investment?
6. Explain the main difference between a bond and a common stock.
7. How does a decline in the value of the pound sterling affect British consumers?
8. How does an increase in the value of the pound sterling affect American businesses?
9. How can changes in foreign exchange rates affect the profitability of financial institutions?
10. Looking at Figure 1.3, in what years would you have chosen to visit the Grand Canyon in Arizona rather than the Tower of London?
11. Can you think of a reason why people in general do not lend money to one another to buy a house or a car? How would your answer explain the existence of banks?
12. What are the other important financial intermediaries in the economy besides banks?
13. Can you date the latest financial crisis in the United States or in Europe? Are there reasons to think that these crises might have been related? Why?
14. What types of risks do financial institutions face?
15. Why do managers of financial institutions care so much about the activities of the Federal Reserve System?

QUANTITATIVE PROBLEMS

1. The following table lists foreign exchange rates between U.S. dollars and British pounds (GBP) during April.

Date	U.S. Dollars per GBP
4/1	1.9564
4/4	1.9293
4/5	1.914
4/6	1.9374
4/7	1.961
4/8	1.8925
4/11	1.8822
4/12	1.8558
4/13	1.796
4/14	1.7902
4/15	1.7785
4/18	1.7504
4/19	1.7255
4/20	1.6914
4/21	1.672
4/22	1.6684
4/25	1.6674
4/26	1.6857
4/27	1.6925
4/28	1.7201
4/29	1.7512

Which day would have been the best day to convert $200 into British pounds? Which day would have been the worst day? What would be the difference in pounds?

WEB EXERCISES

Working with Financial Market Data

1. In this exercise we will practice collecting data from the Web and graphing it using Excel. Use the example on pages 10–12 as a guide. Go to **https://fred.stlouisfed.org/series/DJIA**, and select "10 year graph" on the top middle. On the far right select "Edit Graph." Choose "modify frequency" and select "Monthly." Click on the X on the top right to return to the graph and then choose "Download" and then "Excel(data)" from the drop down.

a. Using the method presented in this chapter, move the data into an Excel spreadsheet.

b. Using the data from step a, prepare a chart. Use the Chart Wizard to properly label your axes.

2. In Web Exercise 1 you collected and graphed the Dow Jones Industrial Average. Now go to **www.forecasts.org**. Click on "Stock Market Forecast" and then on "Dow Jones Industrial Average" in the left column. Review the forecast in the graph.

a. What is the Dow forecast to be in six months?

b. What percentage increase is forecast for the next six months?