1 Why Study Money, Banking, and Financial Markets?

Learning Objectives

1.1 Recognize the importance of financial markets in the economy.

1.2 Describe how financial intermediation and financial innovation affect banking and the economy.

1.3 Identify the basic links among monetary policy, the business cycle, and economic variables.

1.4 Explain the importance of exchange rates in a global economy.

1.5 Explain how the study of money, banking, and financial markets may advance your career.

1.6 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.

1.1 WHY STUDY FINANCIAL MARKETS?

LO 1.1 Recognize the importance of financial markets in the economy.

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 below 1% in 2004 and rose to 5% by 2007. It then fell to near zero from 2009 to 2015, then rose to above 2% in 2018, only to fall back to near zero again when the coronavirus pandemic led to the Covid-19 recession in March 2020.

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 2018, and then rose again during the Covid-19 recession in 2020.

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

[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.

Real-time data

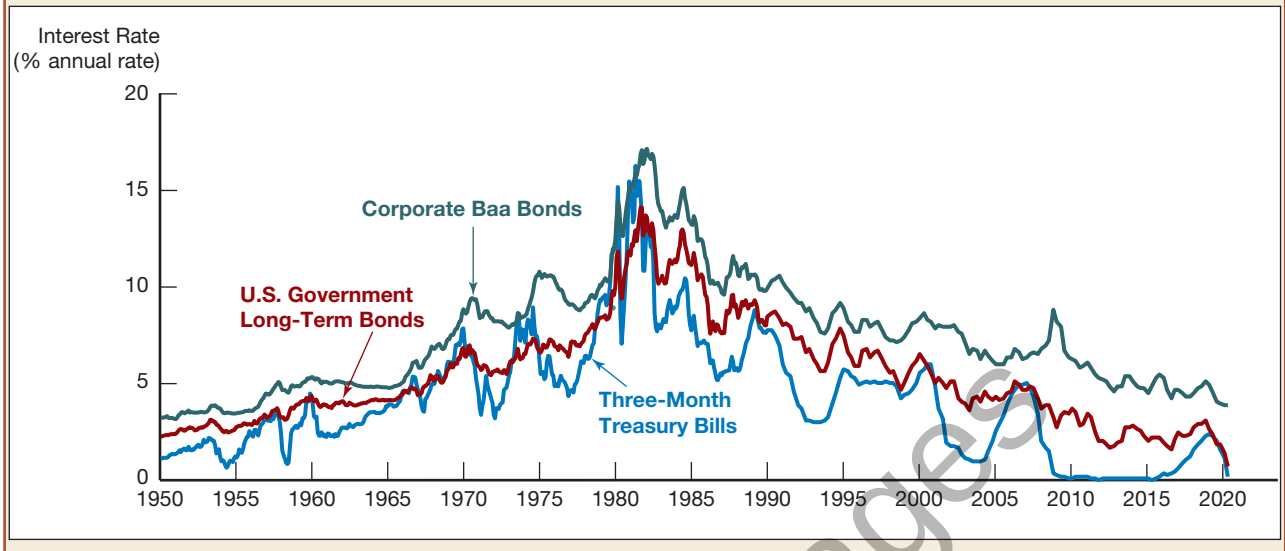

FIGURE 1 **Interest Rates on Selected Bonds, 1950–2020**

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

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 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 a peak just short of 30,000 in February 2020. The stock market then crashed in the wake of the coronavirus pandemic, falling by over 25% in the space of a month. 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

Real-time data

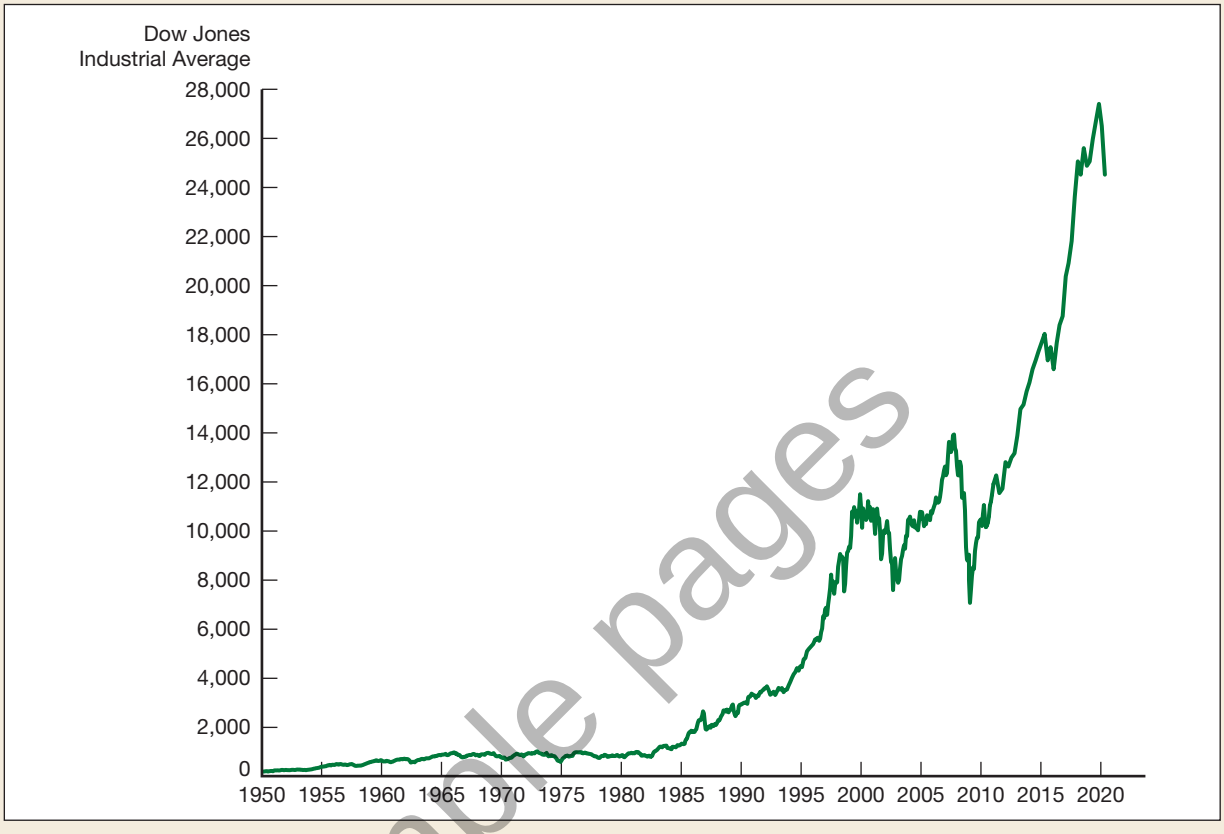

FIGURE 2 **Stock Prices as Measured by the Dow Jones Industrial Average, 1950–2020.**
Stock prices are extremely volatile.
Source: Federal Reserve Bank of St. Louis, FRED database: https://fred.stlouisfed.org/series/DJIA

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 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.

1.2 WHY STUDY FINANCIAL INSTITUTIONS AND BANKING?

LO 1.2 Describe how financial intermediation and financial innovation affect banking and the economy.

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, the individual 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.

1.3 WHY STUDY MONEY AND MONETARY POLICY?

LO 1.3 Identify the basic links among monetary policy, the business cycle, and economic variables.

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 up to that time, 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 early 2020, the unemployment rate had fallen to 3.5%, only to rise sharply starting in March 2020, with the onset of the Covid-19 recession.

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 1950–2020 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

Real-time data

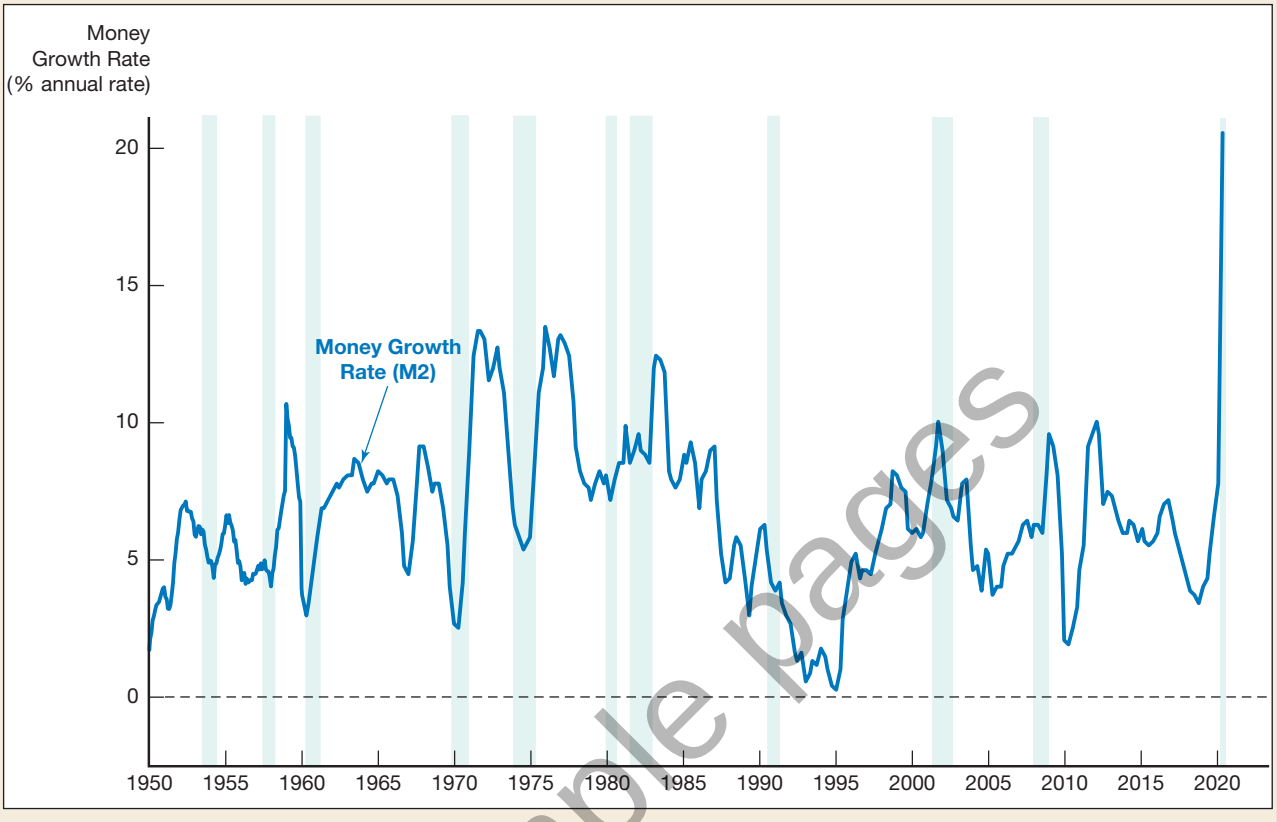

FIGURE 3 **Money Growth (M2 Annual Rate) and the Business Cycle in the United States, 1950–2020**

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

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 20 through 26 (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 2020, 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 simply, the *price level* (a more precise definition is found in the appendix to this chapter). From 1960 to 2020, the price level has increased more than sevenfold. **Inflation**, a continual increase in

Real-time data

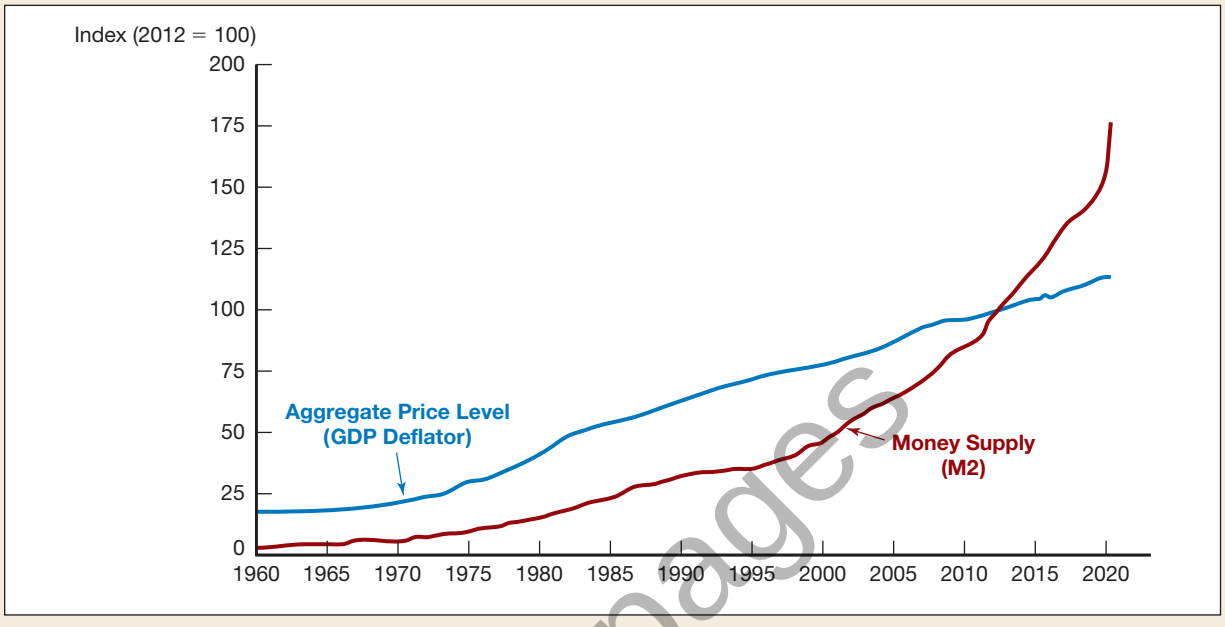

FIGURE 4 **Aggregate Price Level and the Money Supply in the United States, 1960–2020**
From 1960 to 2020, the price level has increased more than sevenfold.
Source: Federal Reserve Bank of St. Louis, FRED database: https://fred.stlouisfed.org/series/M2SL; https://fred.stlouisfed.org/series/GDPDEF

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 2009–2019 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 high money growth rates, such as Russia and Turkey, tend to have higher inflation rates. 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, 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 20 and 24.

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

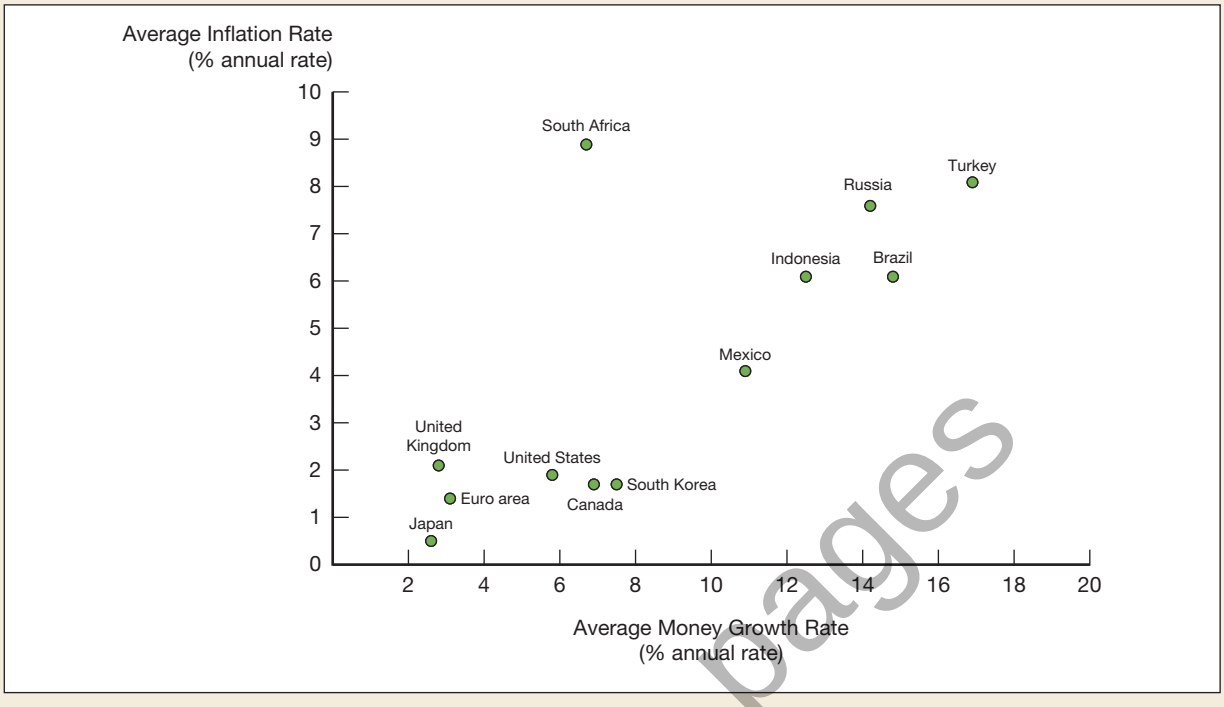

FIGURE 5 **Average Inflation Rate Versus Average Rate of Money Growth for Selected Countries, 2009–2019**

A positive association can be seen between the ten-year averages of inflation and the growth rate of the money supply: Countries with high money growth rates tend to have higher inflation rates.

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

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 2020. 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 organization responsible for the conduct of a nation's monetary policy is the **central bank**. The United States' central bank is the **Federal Reserve System** (also called simply "**the Fed**"). In Chapters 14 through 17 (Part 4), we study how central banks such as the Federal Reserve System can affect the quantity of money and interest rates in the economy, and then we look at how monetary policy is actually conducted in the United States and elsewhere.

Real-time data

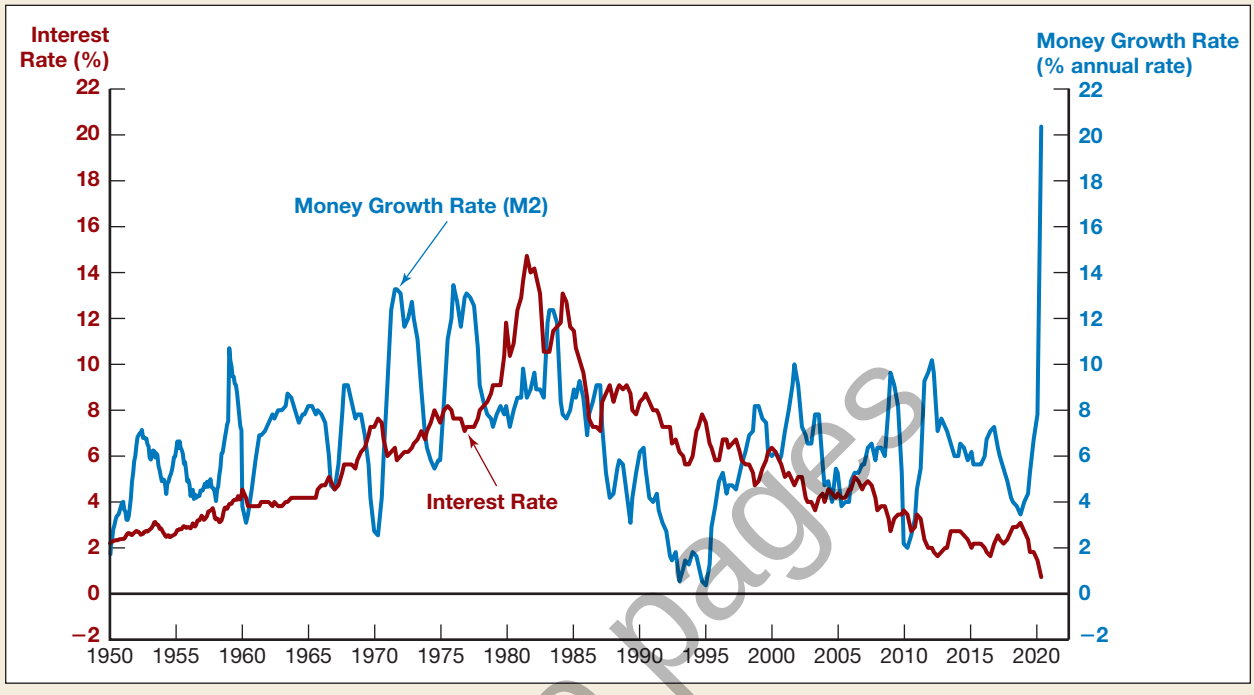

FIGURE 6 **Money Growth (M2 Annual Rate) and Interest Rates (Long-Term U.S. Treasury Bonds), 1950–2020**

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.

Source: Federal Reserve Bank of St. Louis, FRED database: https://fred.stlouisfed.org/series/M2SL; https://fred.stlouisfed.org/series/GS10

Fiscal Policy and Monetary Policy

Fiscal policy involves decisions about government spending and taxation. A **budget deficit** is an excess of government expenditures with respect to tax revenues for a particular time period, typically a year, while a **budget surplus** arises when tax revenues exceed government expenditures. The government must finance any budget deficit by borrowing, whereas a budget surplus leads to a lower government debt burden. As Figure 7 shows, the budget deficit, relative to the size of the U.S. economy, peaked in 1983 at 6% of national output (as calculated by the **gross domestic product**, or **GDP**, a measure of aggregate output described in the appendix to this chapter). Since then, the budget deficit at first declined to less than 3% of GDP, rose again to 5% of GDP by the early 1990s, and fell subsequently, leading to budget surpluses from 1999 to 2001. In the aftermath of the terrorist attacks of September 11, 2001, the war in Iraq that began in March 2003, and the 2007–2009 financial crisis, the budget swung back into deficit, with deficits at one point exceeding 10% of GDP and then falling substantially thereafter. The budget deficit then rose starting in 2016 and shot up sharply when the coronavirus pandemic hit the economy in 2020. What to do about budget deficits has been the subject of legislation and the source of bitter battles between the president and Congress in recent years.

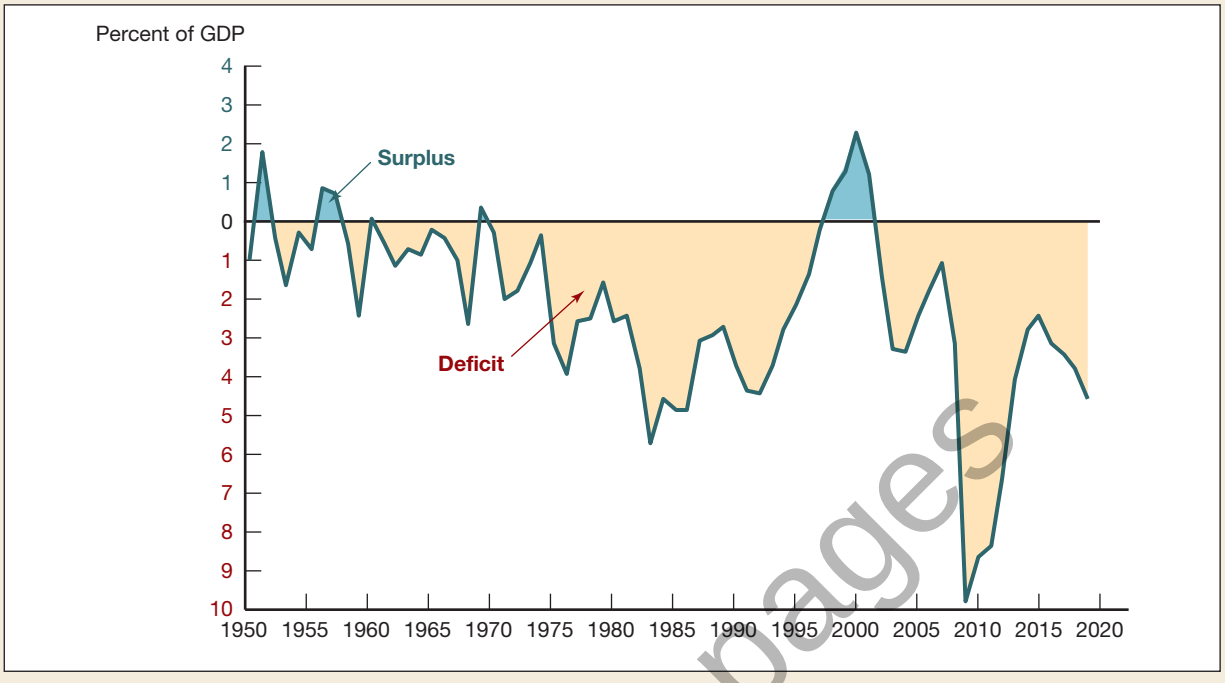

FIGURE 7 **Government Budget Surplus or Deficit as a Percentage of Gross Domestic Product, 1950–2019**

The budget deficit, relative to the size of the U.S. economy, has fluctuated substantially over the years. It rose to 6% of GDP in 1983 and then fell, eventually leading to budget surpluses from 1999 to 2001. Subsequently, budget deficits climbed, peaking at nearly 10% of GDP in 2009, fell substantially thereafter, and then rose starting in 2016.

Source: Federal Reserve Bank of St. Louis, FRED database: https://fred.stlouisfed.org/series/FYFSGDA188S

You may have read statements in newspapers or heard on TV that budget surpluses are a good thing, while deficits are undesirable. In Chapter 20, we examine why deficits might result in a higher rate of money growth, a higher rate of inflation, and higher interest rates.

1.4 WHY STUDY INTERNATIONAL FINANCE?

LO 1.4 Explain the importance of exchange rates in a global economy.

The globalization of financial markets has accelerated at a rapid pace in recent years. Financial markets have become increasingly integrated throughout the world. American companies often borrow in foreign financial markets, and foreign companies borrow in U.S. financial markets. Banks and other financial institutions, such as JPMorgan Chase, Citigroup, UBS, and Deutsche Bank, have become increasingly international, with operations in many countries throughout the world. Part 5 of this book explores the foreign exchange market and the international financial system.

The Foreign Exchange Market

For funds to be transferred from one country to another, they have to be converted from the currency of 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**, or the price of one country's currency in terms of another's, is determined.

Figure 8 shows the exchange rate for the U.S. dollar from 1973 to 2020 (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 been substantial: The dollar's value rose slightly until 1976 and then reached a low point in the 1978–1980 period. From 1980 to early 1985, the dollar's value appreciated dramatically and then declined again, reaching another low in 1995. The dollar subsequently appreciated until 2002 and then depreciated substantially from 2002 until 2011, with only a temporary upturn in 2008 and 2009. From 2011 until 2020, the dollar appreciated again to values near its previous peak in 2002.

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 one euro to a peak of nearly $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 within the United States or American-made wine).

Real-time data

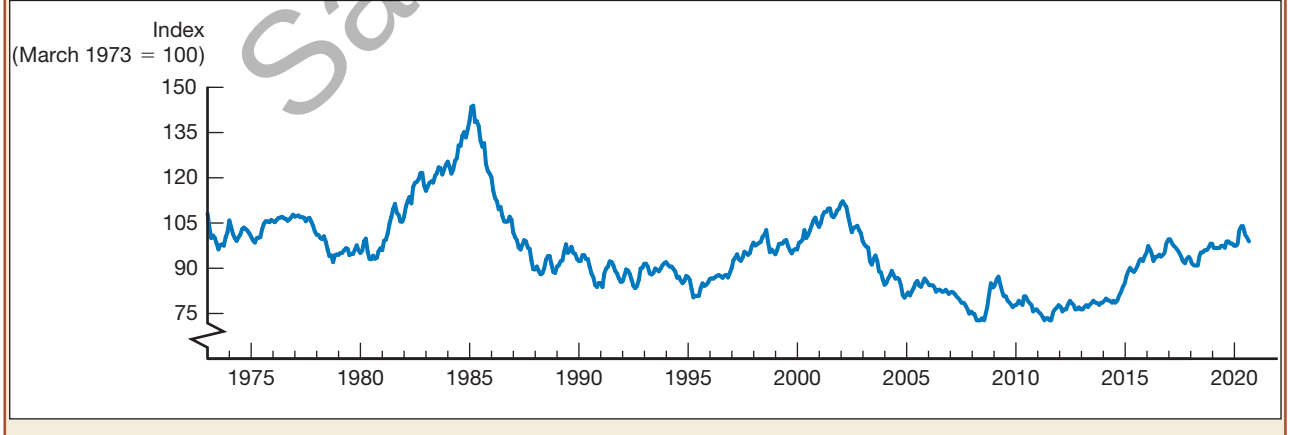

FIGURE 8 **Exchange Rate of the U.S. Dollar, 1973–2020**

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/TWEXM and https://fred.stlouisfed.org/series/DTWEXBGS

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 when the dollar strengthened during the 1980–1985, 1995–2002, and 2011–2020 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 the businesses' products. The decline in the value of the dollar from 1985 to 1995 and from 2002 to 2011 had the opposite effect: It made foreign goods more expensive but made American businesses more competitive. Fluctuations in the foreign exchange markets have major consequences for the American economy.

In Chapter 18, we study how exchange rates are determined in the foreign exchange market, in which dollars are bought and sold for foreign currencies.

The International Financial System

The tremendous increase in capital flows among countries has heightened the international financial system's impact on domestic economies. Issues we will explore in Chapter 19 include:

- How does a country's decision to fix its exchange rate to that of another nation shape the conduct of monetary policy?
- What is the impact of capital controls that restrict mobility of capital across national borders on domestic financial systems and the performance of the economy?
- What role should international financial institutions, such as the International Monetary Fund, play in the international financial system?

1.5 MONEY, BANKING, AND FINANCIAL MARKETS AND YOUR CAREER

LO 1.5 Explain how the study of money, banking, and financial markets may advance your career.

Before taking this class, you might have asked yourself the practical question, "How will the study of money, banking, and financial markets help my career?" For some of you, the answer is straightforward. Financial institutions are among the largest employers in the country, and studying money, banking, and financial markets can help you get a good job in the financial sector.

Even if your interests lie elsewhere, the study of money, banking, and financial institutions can help advance your career because at many times in your life, as an employee or the owner of a business, the critical thinking skills learned in this study will improve your performance. For example, understanding monetary policy may help you predict when interest rates will rise or fall, helping you to make decisions about whether it is better to borrow now or to wait until later. Knowing how banks and other 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. Knowledge of how financial markets work may enable you to make better investment decisions, whether for yourself or for the company you work for.

1.6 HOW WE WILL STUDY MONEY, BANKING, AND FINANCIAL MARKETS

LO 1.6 Describe how the text approaches the teaching of money, banking, and financial markets.

This textbook stresses the "economic way of thinking" by developing a unifying framework in which you will study money, banking, and financial markets. This analytic framework uses a few basic economic concepts to organize your thinking about the determination of asset prices, the structure of financial markets, bank management, and the role of money in the economy. It encompasses the following basic concepts:

- A simplified approach to the demand for assets
- The concept of equilibrium
- Basic supply and demand analysis to explain behavior of financial markets
- The search for profits
- An approach to financial structure based on transaction costs and asymmetric information
- Aggregate supply and demand analysis

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 a mass of dull facts that you will forget soon after the final exam. This framework will also provide you with the tools you need to understand trends in the financial marketplace and in variables such as interest rates, exchange rates, inflation, and aggregate output.

To help you understand and apply the unifying analytic framework, simple models are constructed 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 uses case studies, applications, and special-interest boxes to present evidence that supports or casts doubts on the theories being discussed. This exposure to real-life events and empirical data should dissuade you from thinking that all economists do is make abstract assumptions and develop theories that have little to do with actual behavior.

To function better financially in the real world outside the classroom, you must have the tools with which to follow the financial news that is reported in leading financial publications and on the Web. To help and encourage you to read the financial news, this book contains special boxed inserts titled "Following the Financial News" that provide detailed information and definitions to help you evaluate data that are discussed frequently in the media. This text also allows you to view the most current data for a high percentage of the in-text data figures using the Federal Reserve Bank of St. Louis's FRED database. Figures for which you can do this are labeled *Real-Time Data.*

To master any field, you need to practice, practice, practice. To help you in this endeavor, this book contains over 700 end-of-chapter questions and applied problems that ask you to apply the analytic concepts you have learned to real-world issues. In addition, at the end of almost every chapter there are several real-time data analysis problems, which ask you to download the most recent data from the Federal Reserve Bank of St. Louis's FRED database and then use these data to answer interesting questions.

CONCLUDING REMARKS

The study of money, banking, and financial markets is an exciting field that directly affects your life and career. Interest rates influence the earnings you make on your savings and the payments on loans you may seek for a car or a house, and monetary policy may affect your job prospects and the prices you will pay for goods in the future. Your study of money, banking, and financial markets will introduce you to many of the controversies related to economic policy that are hotly debated in the political arena and will help you gain a clearer understanding of the economic phenomena you hear about in the news media. The knowledge you gain will stay with you and benefit you long after this course is over.

SUMMARY

1. Activities in financial markets directly affect 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. 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.
3. Money and monetary policy appear to have a major influence on inflation, business cycles, and interest rates. Because these economic variables are so important to the health of the economy, we need to understand how monetary policy is and should be conducted. We also need to study government fiscal policy because it can be an influential factor in the conduct of monetary policy.
4. The study of money, banking, and financial markets can help advance your career by helping you get a high-paying job in the financial sector, decide when you or your firm should borrow, get a better deal from financial institutions, or make better investment decisions.
5. This textbook stresses the "economic way of thinking" by developing a unifying analytic framework in which to study money, banking, and financial markets, using a few basic economic principles. The textbook also emphasizes the interaction of theoretical analysis and empirical data.

KEY TERMS

aggregate income, p. 67
aggregate output, p. 55
aggregate price level, p. 56
asset, p. 51
banks, p. 54
bond, p. 51
budget deficit, p. 59
budget surplus, p. 59
business cycles, p. 55
central bank, p. 58
common stock, p. 51
e-finance, p. 54
Federal Reserve System (the Fed), p. 58
financial crises, p. 55
financial innovation, p. 54
financial intermediaries, p. 54
financial markets, p. 50
fiscal policy, p. 59
foreign exchange market, p. 61
foreign exchange rate, p. 61
gross domestic product (GDP), p. 67
inflation, p. 56
inflation rate, p. 57
interest rate, p. 51
monetary policy, p. 58
monetary theory, p. 56
money (money supply), p. 55
recession, p. 55
security, p. 51
stock, p. 51
unemployment rate, p. 55

QUESTIONS

1. What is the typical relationship among interest rates on three-month Treasury bills, long-term Treasury bonds, and Baa corporate bonds?
2. What effect does high volatility of financial markets have on people's willingness to spend?

3. Explain the main difference between a bond and a common stock.
4. What is the main role of a financial intermediary? Name two financial intermediaries.
5. What was the main cause of the global 2020 recession?
6. 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?
7. Why are banks important to the financial system?
8. 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?
9. Has the inflation rate in the United States increased or decreased in the past few years? What about interest rates?
10. If history repeats itself and we see a decline in the rate of money growth, what might you expect to happen to
    a. real output?
    b. the inflation rate?
    c. interest rates?
11. When interest rates decrease, how might businesses and consumers change their economic behavior?
12. Is everybody worse off when interest rates rise?
13. What is the main role of a central bank? Why are central banks, like the European Central Bank (ECB), important to financial analysts?
14. Germany is one of the few countries that has maintained a budget surplus in the last five years, and according to Reuters, the federal government made a record surplus of €13.5 billion in 2019. How does a budget surplus arise?
15. How would a fall in the value of the pound sterling affect British consumers?
16. How would an increase in the value of the pound sterling affect American businesses?
17. How can changes in foreign exchange rates affect the profitability of financial institutions?
18. According to Figure 8, in which years would you have chosen to visit the Grand Canyon in Arizona rather than the Tower of London?
19. When the dollar is worth more in relation to currencies of other countries, are you more likely to buy American-made or foreign-made jeans? Are U.S. companies that manufacture jeans happier when the dollar is strong or when it is weak? What about an American company that is in the business of importing jeans into the United States?
20. While much of the Japanese government debt is held by domestic investors, some of it is also held by foreign investors. How do the fluctuations in the Japanese yen affect the value of that debt held by foreigners?

APPLIED PROBLEMS

21. The following table lists the foreign exchange between euros (€) and British pounds (£) during October 2020. Which day would have been the best for converting €100 into British pounds? Which day would have been the worst? What would the difference be in pounds?

Date	€/£		Date	€/£	
10/1/2020	1.086	0.92	10/16/2020	1.034	0.97
10/2/2020	1.084	0.92	10/19/2020	1.033	0.97
10/5/2020	1.081	0.93	10/20/2020	1.05	0.95
10/6/2020	1.07	0.93	10/21/2020	1.06	0.94
10/7/2020	1.051	0.95	10/22/2020	1.07	0.93
10/8/2020	1.042	0.96	10/23/2020	1.086	0.92
10/9/2020	1.04	0.96	10/26/2020	1.09	0.92
10/12/2020	1.038	0.96	10/27/2020	1.091	0.92
10/13/2020	1.037	0.96	10/28/2020	1.1	0.91
10/14/2020	1.036	0.97	10/29/2020	1.12	0.89
10/15/2020	1.035	0.97	10/30/2020	1.1	0.91

DATA ANALYSIS PROBLEMS

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

1. **Real-time Data Analysis** Go to the St. Louis Federal Reserve FRED database, and find data on the three-month Treasury bill rate (TB3MS), the three-month AA nonfinancial commercial paper rate (CPN3M), the 30-year Treasury bond rate (GS30), the 30-year conventional mortgage rate (MORTGAGE30US), and the NBER recession indicators (USREC). For the mortgage rate indicator, set the frequency to "monthly."
    a. In general, how do these interest rates behave during recessions and during expansionary periods?
    b. In general, how do the three-month rates compare to the 30-year rates? How do the Treasury rates compare to the respective commercial paper and mortgage rates?
    c. For the most recent available month of data, take the average of each of the three-month rates and compare it to the average of the three-month rates from January 2000. How do the averages compare?
    d. For the most recent available month of data, take the average of each of the 30-year rates and compare it to the average of the 30-year rates from January 2000. How do the averages compare?
2. **Real-time Data Analysis** Go to the St. Louis Federal Reserve FRED database, and find data on the M1 money supply (M1SL) and the 10-year Treasury bond rate (GS10). Add the two series into a single graph by using the "Add Data Series" feature. Transform the M1 money supply variable into the M1 growth rate by adjusting the *units* for the M1 money supply to "Percent Change from Year Ago."
    a. In general, how have the growth rate of the M1 money supply and the 10-year Treasury bond rate behaved during recessions and during expansionary periods since the year 2000?
    b. In general, is there an obvious, stable relationship between money growth and the 10-year interest rate since the year 2000?
    c. Compare the money growth rate and the 10-year interest rate for the most recent month available to the rates for January 2000. How do the rates compare?

APPENDIX TO CHAPTER 1

Defining Aggregate Output, Income, the Price Level, and the Inflation Rate

Because these terms are used so frequently throughout the text, we need to have a clear understanding of the definitions of *aggregate output*, *income*, the *price level*, and the *inflation rate*.

AGGREGATE OUTPUT AND INCOME

The most commonly reported measure of aggregate output, the **gross domestic product (GDP)**, is the market value of all final goods and services produced in a country during the course of a year. This measure excludes two sets of items that at first glance you might think it would include. Purchases of goods that have been produced in the past, whether a Rembrandt painting or a house built 20 years ago, are not counted as part of GDP; nor are purchases of stocks or bonds. Neither of these categories enters into the GDP because these categories do not include goods and services produced during the course of the year. Intermediate goods, which are used up in producing final goods and services, such as the sugar in a candy bar or the energy used to produce steel, are also not counted separately as part of the GDP. Because the value of the final goods already includes the value of the intermediate goods, to count them separately would be to count them twice.

Aggregate income, the total income of *factors of production* (land, labor, and capital) from producing goods and services in the economy during the course of the year, is best thought of as being equal to aggregate output. Because the payments for final goods and services must eventually flow back to the owners of the factors of production as income, income payments must equal payments for final goods and services. For example, if the economy has an aggregate output of $10 trillion, total income payments in the economy (aggregate income) are also $10 trillion.

REAL VERSUS NOMINAL MAGNITUDES

When the total value of final goods and services is calculated using current prices, the resulting GDP measure is referred to as *nominal GDP*. The word *nominal* indicates that values are measured using current prices. If all prices doubled but actual production of goods and services remained the same, nominal GDP would double, even though people would not enjoy the benefits of twice as many goods and services. As a result, nominal variables can be misleading measures of economic well-being.

A more reliable measure of economic production expresses values in terms of prices for an arbitrary base year, currently 2009. GDP measured with constant prices is referred to as *real GDP*, the word *real* indicating that values are measured in terms of fixed prices. Real variables thus measure the quantities of goods and services and do not change because prices have changed, but rather only if actual quantities have changed.

A brief example will make the distinction clearer. Suppose that you have a nominal income of $30,000 in 2022 and that your nominal income was $15,000 in 2012. If all prices doubled between 2012 and 2022, are you better off? The answer is no: Although your income has doubled, your $30,000 buys you only the same amount of goods because prices have also doubled. A *real* income measure indicates that your income in terms of the goods it can buy is the same. Measured in 2012 prices, the $30,000 of nominal income in 2022 turns out to be only $15,000 of real income. Because your real income is actually the same for the two years, you are no better or worse off in 2022 than you were in 2012.

Because real variables measure quantities in terms of real goods and services, they are typically of more interest than nominal variables. In this text, discussion of aggregate output or aggregate income always refers to real measures (such as real GDP).

AGGREGATE PRICE LEVEL

In this chapter, we defined the aggregate price level as a measure of average prices in the economy. Three measures of the aggregate price level are commonly encountered in economic data. The first is the *GDP deflator*, which is defined as nominal GDP divided by real GDP. Thus, if 2022 nominal GDP is $10 trillion but 2022 real GDP in 2012 prices is $9 trillion,

$$\text{GDP deflator} = \frac{\$10 \text{ trillion}}{\$9 \text{ trillion}} = 1.11$$

The GDP deflator equation indicates that, on average, prices have risen 11% since 2012. Typically, measures of the price level are presented in the form of a price index, which expresses the price level for the base year (in our example, 2012) as 100. Thus the GDP deflator for 2022 would be 111.

Another popular measure of the aggregate price level (which officials in the Fed frequently focus on) is the *PCE deflator*, which is similar to the GDP deflator and is defined as nominal personal consumption expenditures (PCE) divided by real PCE.

The measure of the aggregate price level that is most frequently reported in the press is the *consumer price index* (*CPI*). The CPI is measured by pricing a "basket" of goods and services bought by a typical urban household. If, over the course of the year, the cost of this basket of goods and services rises from $500 to $600, the CPI has risen by 20%. The CPI is also expressed as a price index with the base year equal to 100.

The CPI, the PCE deflator, and the GDP deflator measures of the price level can be used to convert or deflate a nominal magnitude into a real magnitude. This is accomplished by dividing the nominal magnitude by the price index. In our example, in which the GDP deflator for 2022 is 1.11 (expressed as an index value of 111), real GDP for 2022 equals

$$\frac{\$10 \text{ trillion}}{1.11} = \$9 \text{ trillion in 2012 prices}$$

which corresponds to the real GDP figure for 2022 assumed earlier.

GROWTH RATES AND THE INFLATION RATE

The media often talk about the economy's growth rate, and particularly the growth rate of real GDP. A growth rate is defined as the percentage change in a variable, that is,

$$\text{growth rate of } x = \frac{x_t - x_{t-1}}{x_{t-1}} \times 100$$

where t indicates today and $t - 1$ indicates a year earlier.

For example, if real GDP grew from \$9 trillion in 2022 to \$9.5 trillion in 2023, then the GDP growth rate for 2023 would be 5.6%:

$$\text{GDP growth rate} = \frac{\$9.5 \text{ trillion} - \$9 \text{ trillion}}{\$9 \text{ trillion}} \times 100 = 5.6\%$$

The inflation rate is defined as the growth rate of the aggregate price level. Thus, if the GDP deflator rose from 111 in 2022 to 113 in 2023, the inflation rate using the GDP deflator would be 1.8%:

$$\text{inflation rate} = \frac{113 - 111}{111} \times 100 = 1.8\%$$

If the growth rate is for a period of less than one year, it is usually reported on an annualized basis; that is, it is converted to the growth rate over a year's time, assuming that the growth rate remains constant. For GDP, which is reported quarterly, the annualized growth rate would be approximately four times the percentage change in GDP from the previous quarter. For example, if GDP rose $\frac{1}{2}$% from the first quarter of 2022 to the second quarter of 2022, then the annualized GDP growth rate for the second quarter of 2022 would be reported as 2%($= 4 \times \frac{1}{2}$%). (A more accurate calculation would be 2.02%, because a precise quarterly growth rate should be compounded on a quarterly basis.)