CHAPTER 1

Introduction

WHAT YOU WILL LEARN IN THIS CHAPTER

- What is meant by the financial system.
- What is meant by monetary policy.
- The ways in which the financial system contributes to economic well-being—by transferring resources from surplus to deficit spending units; by providing a variety of financial instruments to participants; by providing a reliable and efficient payment system; by providing for a better allocation of risk in the economy; and by imposing discipline on business management.
- Some basic features of the financial system that will keep coming up in our study.

OVERVIEW

Financial markets, banks, and monetary policy all touch our lives in numerous ways. Perhaps you have been able to be in school because of a student loan or money that your parents saved while you were growing up. When you last bought a jacket from a clothing store, you paid for it with cash in your wallet or with a check, debit card, or credit card. Chances are that the car you are driving was bought with an auto loan. Before long, you are likely to be in the market to purchase a home and will need a mortgage to make it happen. Prior to that, you could well be looking for an apartment, and the owner of that property took out a mortgage to buy the building.

Once you launch your career, you will be considering a savings program to meet future goals, such as accumulating a nest egg for retirement. Speaking of your career, the prospects for easily finding the job you are seeking will depend importantly on the state of the economy when you begin your job search, as will the opportunity for a summer job or an internship this summer. This, in turn, is affected by the central bank's monetary policy, which has an important influence on interest rates and the stock market. Central banks also attempt to ensure that the financial system is sound and stable, which fosters the availability of financing for homes, cars, and businesses whose products and services you like to buy. We could go on with examples of the many ways the financial system and monetary policy affect your life.

By *financial system* we mean financial markets, such as the markets for bonds, stocks, mortgages, and foreign exchange, and financial institutions, such as commercial banks, pension funds, and mutual funds. Connecting these and the broader

economy is the payment system, which contains the infrastructure for making payments for purchases of goods, services, and financial assets.

For most people, the financial system and central banking[1] are highly arcane—they seem very complicated, confusing, and opaque. Moreover, financial and monetary matters conjure up many images and a range of emotions—Wall Street, pinstripes, closing the big deal, complex and inscrutable instruments, extravagance, greed, avarice, bailouts, and so forth. For some, the financial system also seems parasitic—living off the rest of the economy and not itself contributing to the public's well-being.

The financial crisis of 2008 and accompanying Great Recession have changed perceptions of the linkage between the financial system and the economy. That recession was brought on by the financial crisis—which was of an order of magnitude that rivaled that causing the Great Depression of the 1930s. It drove home the point that a malfunctioning financial system—whatever the cause—can bring down an economy, driving millions of people from the workforce to the unemployment lines. The major reason why the near collapse of the financial system in 2008 did not cause another Great Depression was enlightened public policy—primarily actions taken by the U.S. central bank, the Federal Reserve—informed by the mistakes of the 1930s and driven by a dogged determination to avoid reliving that horrible chapter in U.S. and world history. The financial crisis has led to a variety of changes in the financial system, many stemming from modifications in the behavior of financial market participants prompted by that shock and others from changes in public policy and the way the financial system is regulated.

Monetary policy—in the United States, the province of the Federal Reserve System (the Fed)—has come to be the primary policy for macroeconomic stabilization around the globe. In the United States, the Fed is entrusted with achieving price stability and high and sustainable levels of aggregate output and employment. This prominent place for monetary policy is based on decades of research and experience that shows that monetary policy can be highly effective in achieving these results and that price stability fosters the highest level of economic performance. Monetary policy works through financial markets, the banking system and other parts of the financial system, to influence spending decisions by businesses and households—that is, aggregate demand.

Research also shows that economies having sound and well-developed financial systems perform better and are able to achieve higher standards of living. As a consequence, considerable attention is given these days to improving the functioning of the financial system. At the same time, much attention is being given to identifying the causes of financial crises—and the contagion that adds to their severity—and ways to prevent the next one and avoid the damage to economic well-being that would result. For central banks, achieving financial stability has taken on a priority comparable that of monetary policy.

WHERE WE ARE GOING IN THIS BOOK

In this book, we begin our journey with a look at the various ways in which the financial system contributes to our well-being—that is, how it creates economic value. In Chapter 2, we develop a helpful framework for identifying the different

types of financial markets, such as bond and stock markets, and financial institutions, such as commercial banks, life insurance companies, and hedge funds, and the respective roles that they play. Because commercial banks traditionally have been the most important part of the financial system—and still dominate the financial systems of many economies today—they are singled out in Chapter 3 for further discussion; this discussion also highlights why commercial banks have been a primary conduit for the transmission of monetary policy.

The values of the financial instruments that are made available by the financial system, such as deposits, bonds, and stocks, are based on the value of the cash flows that their owners receive. In Chapter 4, we develop a model calibrating the (present) value of these cash flows. The interest rate (the time value of money), importantly affected by the central bank's monetary policy, is key to determining this value. In practice, at any moment in time, there are many different interest rates, but they are linked together. In Chapter 5, we discuss how such things as differences in credit risk, liquidity, and taxation affect these rates. Also, the yield curve relating interest rates on instruments of different maturities—the term structure of interest rates—is an important factor behind differences in interest rates. Indeed, an understanding of the term structure of interest rates is key to understanding how central banks go about setting in motion the forces that influence private spending decisions. In practice, holders of financial assets—be they individuals or financial institutions—have objectives that can be met by building portfolios of assets, the subject of Chapter 6. The question of whether you can expect to beat market returns through sagacious selection of stocks and other assets is also explored in Chapter 6.

With this background and the tools developed, we can dig into the major markets, such as the money market, bond market, mortgage market, and equity (stock) market, the subjects of Chapters 7 through 11. Included among them is the relatively recent process of securitization and the creation of securitized assets, which involves the combination of ordinary loans or other instruments into huge portfolios of assets from which pieces are sliced off and sold to various investors.

As noted, the values of financial instruments depend greatly on central banks and their influence on interest rates. In turn, central banks rely on financial markets, commercial banks, and other financial institutions to transmit their policies to the economy. Chapters 12 and 13 look at the evolution and basic features of central banks and how they go about setting and implementing monetary policy. In Chapter 14, we examine the challenges faced by central banks that often interfere with the achievement of their goals. Enhancing the effectiveness of monetary policy is stability of the financial system, and central banks in recent years have elevated the pursuit of policies that will foster financial stability—and avoid financial crises. In Chapter 15, we look at the causes and consequences of financial crises, and the kinds of policy measures that central banks have been developing to prevent them.

Exchange rates and the foreign exchange market increasingly play a role in the financial system and in the transmission of monetary policy, the subject of Chapter 16.

The major financial institutions—commercial banks and other depository institutions, mutual funds, hedge funds and other alternative investments, and pension funds and life insurance companies—are examined in Chapters 17 through 20.

Before proceeding, it is worth noting that the term *investment* or *investor* is used in this book to mean two different things, as is common elsewhere. In the first, investment refers to spending on such things as structures, equipment, software, or

research and development that will add to the profits of a business in the future. This type of investment adds to the capital stock of the economy. In the second, investment refers to a financial investment such as a bond, a stock, or a deposit in a bank. It should be clear from the context which meaning to apply.

CONTRIBUTIONS MADE BY THE FINANCIAL SYSTEM

How does the financial system contribute to economic well-being or create economic value? We can list several:

- It transfers resources from surplus to deficit spending units (from those earning more than they spend to those spending more than they earn).
- A well-developed financial system provides both suppliers of funds (investors) and users of funds with a variety of financial instruments that meet their objectives.
- The variety of instruments available in financial markets enable investors and users of funds to readjust their financial positions when conditions change, requiring a different asset or funding mix to meet their objectives.
- A well-developed financial system provides a payment system that offers inexpensive and reliable ways of making payments for transactions that contribute to a higher standard of living.
- It reallocates risk from those least able to manage risk to those more able.
- It can impose discipline on business managers to focus on expanding revenue and curbing costs.

Let's look at each of these in more detail.

Transfers of Resources from Surplus to Deficit Units

In looking at this role of the financial system, it is useful to break down economic units into four different sectors: households, businesses, governments, and external (foreign). Some tend to be surplus units, others deficit units, and others predominantly neither. Let us look at each sector.

Households are important providers of funds to financial markets—surplus units. However, not all households at any one time are in such a position. Households follow a so-called life-cycle pattern in which many spend more than they earn early in their post–high school years (they are dis-savers). They then move into years in which their incomes rise more rapidly than their spending and they become surplus units (savers). This is followed by their later years when their earnings drop off and at some point again fall below spending and they draw down accumulated saving (dis-savers). This is illustrated by the age, earnings, and spending profile presented in Figure 1.1. In the early years, many people are attending college or other training that will improve their earnings capacity in the future, and are not working full time. As a consequence, they are forgoing income. The earnings that they make, if any, fall short of their spending. Once they get a regular job, their

earnings rise rapidly and begin to surpass spending, as illustrated by point *a* in the diagram. Later on, earnings grow more slowly and tend to level off.

Meanwhile, spending grows, but less rapidly than income for a number of years. The excess of income over spending—saving—is used to repay any debt accumulated in the early years and to build assets for future goals—home purchase, education of children, retirement, and bequests. At some time later in life, point *b* in the diagram, earnings drop below spending and the household becomes a dis-saver again. However, during much of the household's adult years, it saves, and over its entire life the household is a net saver. Thus, the household sector as a whole is a surplus unit, supplying funds to the financial system.

The amount that households will be willing to save will depend, among other things, on the level of interest rates. When interest rates rise, it will be attractive to save more—cut back on spending—and when interest rates fall, it becomes less attractive to save—or more attractive to expand spending.

Similarly, for those households that may be contemplating borrowing to finance consumption spending, a rise in interest rates will make such debt-financed spending less attractive, and they will forgo some spending. Conversely, a decline in interest rates encourages more spending financed by borrowing

Businesses seek to make profits for their owners, and, in the course of doing so, are users of funds—deficit units. Business managers can make profits by looking for investment projects that have rates of return that exceed the cost of financing. The greater the project's rate of return over financing costs, the greater will be the contribution of the project to future profits. The cost of financing can be thought of as the interest rate that must be paid to borrow funds in the market.[2]

Businesses receive earnings in the form of profits, but some of those profits are paid to owners in the form of dividends. Businesses also have funds for

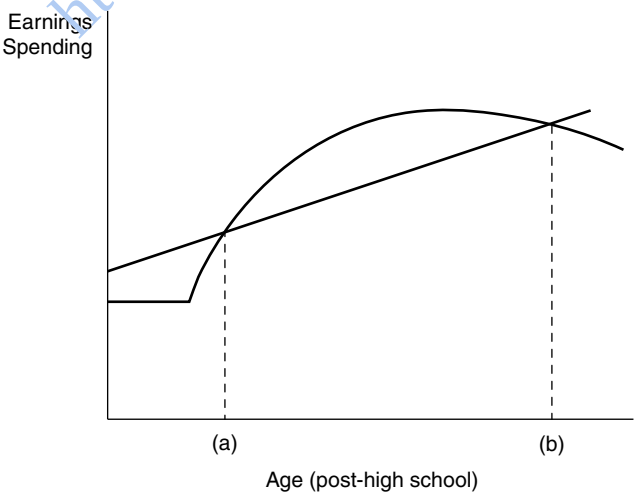

FIGURE 1.1 Age, Earnings, and Spending Profile

investment from depreciation allowances that are intended to replace worn-out or obsolete capital (previous investments). However, it is usually the case that the amount of new investments exceeds the amount of internal funds from retained earnings (profits after dividends) and depreciation—resulting in businesses being deficit units. To undertake all the investments that provide net profit to the owners—those having returns in excess of financing costs—businesses must acquire funds in the financial marketplace. It is worth noting that businesses acting in such a way are not only adding to shareholder profits, but the investments they undertake add to the level of aggregate output and enhance the productivity and (real) wages of workers.

One further issue worth mentioning at this point is the relationship between business investment and the cost of financing—the level of interest rates. We noted above that a business could make more profits for its shareholders by undertaking all projects that have returns that exceed financing costs. If we think of business managers as arraying all potential investment projects from those having the highest to the lowest returns, they will select all projects having returns that exceed the interest rate that they pay when they borrow and will forego those with returns below financing costs. However, if market conditions should change and financing costs—interest rates—decline, then some projects that previously were not pursued—unprofitable—now will become profitable. Thus, businesses will undertake more investment. Because central banks affect the level of interest rates, they play an important role in investment spending decisions.

Governments can in principle be either surplus or deficit units. In practice, in the United States, which category they fall into depends greatly on the level of the government. The *federal* government is a chronic deficit unit, spending well in excess of its receipts. Political leaders at the federal level seem to find it irresistible to favor large spending programs and, at the same time, favor lower taxes. *State and local* governments, in contrast, are usually constrained by constitutions or laws that require that they formulate balanced budgets. This means that in preparing their annual or biannual budgets, they must set spending in line with expected receipts. In practice, they almost never actually achieve balanced budgets—tending to have shortfalls in receipts when their tax receipts are weakening along with their economies or excesses of receipts over spending when their economies are showing unexpected strength. But, over longer periods, their budgets tend to be in balance. That is, state and local governments are neither surplus or deficit units.

The foreign sector can also in principle be either a surplus unit supplying funds to the U.S. financial system or a deficit unit drawing funds from the U.S. financial system. In practice, the foreign or external sector has been a long-time supplier of funds to the U.S. financial system. The reason for this involves a complicated relationship between business investment and government deficits relative to saving. The supply of funds from abroad comes into the U.S. market through our external trade deficit—exports falling short of imports. Suffice it to say that the forces underlying our trade position are unlikely to cause the external sector to shift any time soon from being a surplus unit for the U.S. financial system to a deficit unit.

Putting it together, we can use a diagram to illustrate the transfers of resources from surplus to deficit units. In Figure 1.2, the column on the right contains the amount of funds that surplus units—in practice, households and foreign participants—wish to supply. The column on the left contains the amount of funds demanded by deficit units. And the horizontal bar in the center moving from right to left is the channel through which the financial system makes this transfer. In the next chapter, we will refine this to include different channels representing different parts of the financial system. Note that in this diagram the size of the two bars is the same—that is, the amount that surplus units want to supply equals the amount that deficit units demand. This constitutes an equilibrium situation.

Actually, the supply of funds by surplus units need not equal the amount demanded by deficit units at all times. When disequilibrium occurs, an economic process will be set in motion that brings supply and demand back into balance. This is illustrated in Figure 1.3. In this case, supply has fallen short of demand. In these circumstances, not all deficit units will be able to get as much funds as they desire. As a consequence, those deficit units coming up short will compete with others to get more funds by offering better terms—higher interest rates.[3] As interest rates rise, surplus units are induced to supply more funds, and deficit units begin to trim their demand for funds as returns on some projects have now fallen below the new higher level of interest rates. This process of yields rising will continue until the supply of and demand for funds are matched. This is illustrated by broken lines in both columns and the arrows for each column pointing to the direction of movement. The supply expands (moves up) and the demand contracts (moves down). Interest

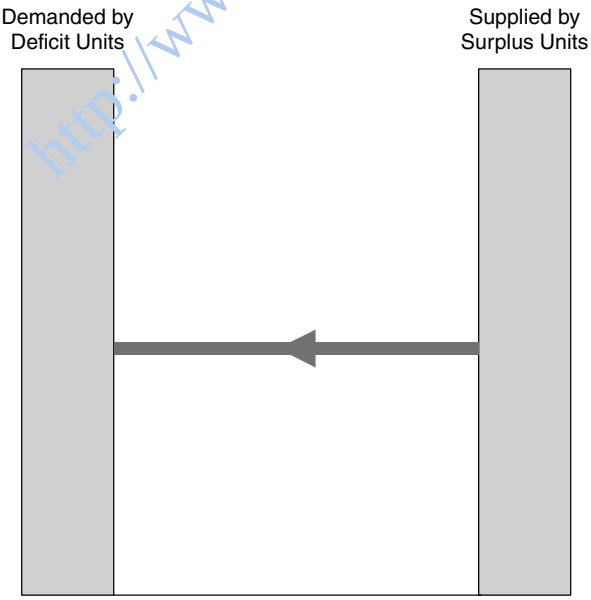

FIGURE 1.2 Transfer of Funds from Surplus to Deficit Units

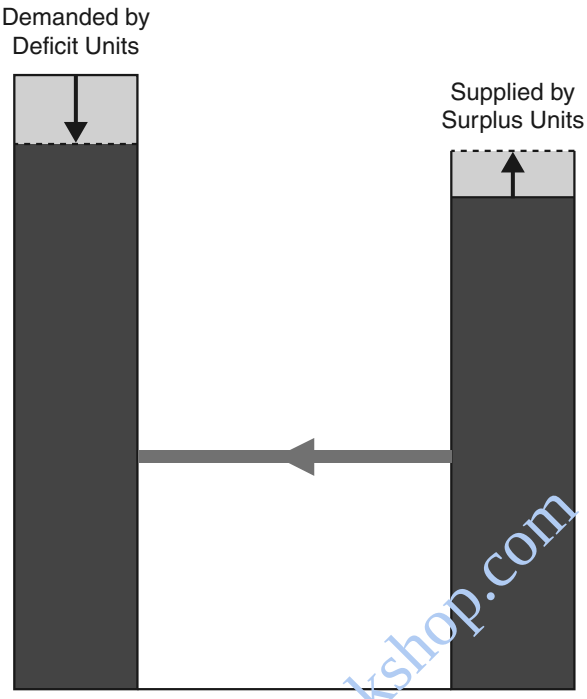

FIGURE 1.3 Shortfall of Funds Supplied (Interest Rates Rise)

rates stop rising when the two bars again have the same height—a new equilibrium is achieved.

A similar situation occurs when the supply of funds exceeds demand, illustrated in Figure 1.4. This could occur, for example, if households wish to save more, perhaps because they become more cautious or because they want to set aside more for retirement or for their heirs. Or perhaps foreign participants want to place more funds in the U.S. market. In either case, some suppliers of funds would become frustrated because they cannot place their funds—demand is less than supply—and would be willing to accept a lower yield to be able to get their funds placed. That is, interest rates would be declining. This would induce some demanders of funds to want more and some suppliers of funds to cut back on their supply. The process ends when supply again matches demand and interest rates stabilize at their new lower level.[4]

It is worth noting that the competitive process of reaching an equilibrium results in the amount of surplus funds being allocated to the highest-valued uses. That is, price rationing ensures that the highest-valued uses will get funded. This leads to a higher overall level of output and growth over time.

Other Contributions

Earlier in this chapter, we listed some *other* important contributions that are made by an effective financial system. Let's discuss them in more detail.

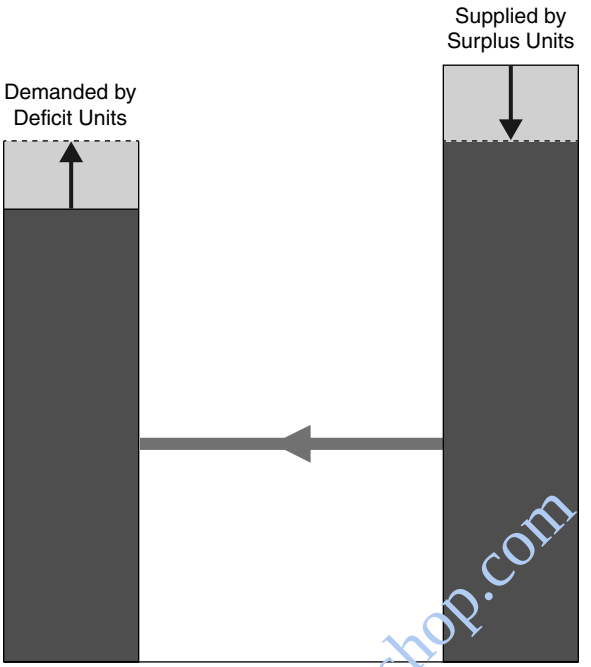

FIGURE 1.4 Surplus of Funds Supplied (Interest Rates Fall)

A variety of financial instruments available to channel funds from surplus to deficit units permits both suppliers and demanders of funds to select those instruments that best suit their objectives. Surplus units are heterogeneous in their objectives and their preferences and the same can be said of deficit units. For example, an investor—surplus unit—may want to place funds for three years, at which point those funds may be needed to meet an obligation, perhaps to pay a tuition bill. The availability of financial instruments that pay back the investor in three years—say, a three-year deposit—will match this saver's needs well, avoiding other difficulties. Similarly, a user of funds may expect to receive a large payment in 10 years, at which time this user can repay the surplus unit. A financial instrument that enables this deficit unit to get funds for a 10-year period will match its needs well and avoid other difficulties. In both situations, the economic unit achieved its preferred situation and avoided the complications that would have resulted if the 3-year or the 10-year instrument were not available—economic value was thereby created. The financial system fosters a matching of interests from within heterogeneous surplus units to counterparts within heterogeneous deficit units.

This variety of financial instruments also enables economic units to readjust financial positions when circumstances change. For example, many investors have intolerance for much risk. In the event that the instrument that the investor had acquired has now become more risky and the investor wants to get out of it for something safer, a secondary

market for this instrument and for the safer one will allow the investor to readjust investments and get into a more comfortable position. We will see in Chapter 4 that some investors have responsibilities to meet payments at specific dates in the future and seek financial instruments that provide them with cash at those times. However, changes in the level of interest rates can cause the pattern of those cash flows to change in ways that diverge from their requirements. In these circumstances, a variety of financial instruments will permit them to readjust—rebalance—their investment portfolios. A large share of trading in financial markets reflects such readjustments of portfolios.

A reliable and efficient payment system fosters transactions that might not otherwise take place. We often take for granted our payment system—that is, the means that we use to make payments for goods, services, and financial assets. We buy something online and use our credit card to pay the vendor who sold us the item. Or you stop by a nearby grocery store to replenish your pantry and pay with your debit card. In both instances, you are able to get what you want and the seller can count on getting payment. Moreover, the costs of making these payments are usually negligible and the transfer of funds from buyer to seller is reliable. In some parts of the world, payments have to be made in cash—sometimes suitcases full. Indeed, if you are buying something from a location far away, you must transport the cash to that location—which can be very risky, even life threatening. A cumbersome or unreliable (risky) payment system reduces the number of transactions that people are willing to make. In contrast, our system does not impose those kinds of barriers to economically worthwhile transactions. Low transactions costs and reliability of our system encourage specialization and division of labor, which promotes higher levels of economic well-being. As we will see in Chapter 3, the banking system provides much of the backbone of our advanced payment system.

The financial system facilitates a reallocation of risk from those unwilling and unable to bear it to those with better ability to manage and more appetite for risk. Some investors wish to avoid risk while others are more willing and better suited to absorb it. For example, investing in long-term mortgages, as we will see, can be very risky for commercial banks that rely on much shorter maturity deposits. Yet commercial banks are well positioned for interfacing with homebuyers and making (originating) such loans. Financial markets have developed to the point where some institutions, such as banks, originate these loans and then sell them—either directly or indirectly—to pension funds and insurance companies that have locked in funds for longer periods and are seeking longer-term investment outlets for such funds. Also, complicated financial instruments have been created using ordinary loans—including auto and credit card loans—in which a large pool of such loans is assembled. Then, the pool is structured in such a way that some investors can be assured of getting repaid in full while others are exposed to more risk of not being fully repaid in return for more yield. The former can be acquired by investors with a high degree of aversion to risk while the latter can be acquired by those better positioned for taking on large amounts of risk.

The financial system imposes discipline on business managers pursuing unwise business strategies. For example, if a business manager needing to raise funds in financial markets is pursuing a new product line that is destined to fail, that firm will be unable to get many investors to part with their funds, or it will need to pay them painfully high interest costs. Also, if the company has stock trading in the marketplace, the price of that stock will drop so low that investors holding the stock—the company's owners—will be motivated to take action against the manager's plan. In such ways, managers are redirected to pursue more promising strategies. Should management, instead, prove to be stubborn in making the needed changes, the low price of the company's shares will induce activist investors or private equity firms to step in and buy up shares, thereby gaining more leverage to force the changes.

RECURRING THEMES IN THE CHAPTERS AHEAD

There are a few themes regarding our financial system today that will recur in the chapters ahead.

- Financial markets are forward looking and are continually repricing financial assets based on new assessments of the outlook for the issuer of the instrument and of the broader economy. The prices of financial instruments that trade throughout the day are continually changing. This is affected by news about the issuer, which alters assessments of the financial health of the issuer and its prospects going forward. Similarly, news bearing on the economy will affect the prospects for a wide range of issuers and market prices more broadly.
- Financial markets dislike uncertainty and risk, and the prices of financial assets fall when uncertainty and risk rise. Another way to view this is that investors must be compensated to take on risk. The more risk, the larger must be the compensation—meaning that the price of the financial asset must be cheaper to attract buyers. Frequently, the entire financial and economic landscape seems to be riskier, and financial markets will respond by selling off assets with risk embedded in them.
- Yields on U.S. Treasury securities tend to be benchmarks for the pricing of other financial instruments, and, as a result, the market for Treasury securities is one of the most closely watched financial markets in the world. In this market, there is price discovery—changes in underlying factors affecting the pricing of credit show through in this market promptly and then are echoed in other markets. Moreover, as we will see, it is through this market that the Federal Reserve seeks to influence credit conditions throughout the economy and thereby spending decisions and output, employment, and the prices of goods and services.
- Financial institutions, such as commercial banks, must have capital (funds placed by owners) to protect creditors, such as depositors. Capital provides a cushion for declines in the value of an institution's assets to be absorbed by its owners before bleeding over to its creditors. The greater the risk profile of the institution, the more capital will creditors insist upon as protection. However, when creditors perceive that the government will protect them from losses, they will not insist on as much capital for protection. Under such circumstances, their

insensitivity to the risk profile of the institution will encourage managers of the institution to pursue more risky strategies on behalf of the shareholders (owners). As we will see in Chapter 2, this creates a moral hazard problem.

- The financial system has increasingly become globalized. Investors seeking diversification and higher returns are reaching across borders. Similarly, those seeking to raise funds are looking for the lowest cost source, be it at home or abroad. Moreover, commercial banks have been following their business customers into new markets and have been seeking new customers abroad. As a consequence, asset prices and the financial condition of major financial institutions are becoming more responsive to developments in other parts of the world.

RESOURCES

You will get the most out of this book if you follow developments in the financial sector and the economy and monetary policy on a regular basis. To assist you are a number of very good resources. These include:

Bloomberg news service www.bloomberg.com

Federal Reserve Board www.federalreserve.gov

Federal Reserve Bank of New York www.newyorkfed.org

St. Louis Fed database (FRED) http://research.stlouisfed.org/fred2?

Federal Deposit Insurance Corporation www.fdic.gov/

Securities and Exchange Commission www.sec.gov/

Wall Street Journal www.wsj.com

Financial Times www.ft.com

The public website of Bloomberg has a vast amount of information posted on a timely basis. This includes stories about the economy, financial markets, and a wide array of financial data covering the stock market, bond market, and the foreign exchange market.

The Federal Board's website has speeches and testimonies of Board members and reports on monetary policy, banking and financial policy, and other policies; a substantial amount of monetary, financial, and economic data; and research papers on these issues. Similarly, the website of the Federal Reserve Bank of New York (FRBNY) contains timely monetary and financial data along with other useful information. The FRED database contains over 35,000 monetary, financial, and economic data series, along with charting software that can be used to produce customized graphs and spreadsheets.

The Federal Deposit Insurance Corporation's (FDIC's) website has a vast amount of banking data, as well as research and policy statements on banking issues. The Securities and Exchange Commission's (SEC's) website contains information on publicly traded companies and securities markets, policy statements, and research on financial markets.

The *Wall Street Journal* is probably the best-known source of information and analysis of economic, financial, policy, and business developments. The *Financial Times* covers these same areas, but with more of a global emphasis.

In this and later chapters, you will be given assignments that utilize these sources, especially Bloomberg, the Board, and FRED. In addition, accompanying this text is a website that contains timely issues relating to financial markets and institutions and monetary policy, with links to individual chapters in the text. This is intended to help you keep up to date on current issues and to better learn how to apply the principles developed in this book to a rapidly changing world.

SUMMARY

1. The financial system underpins and is closely connected to the economy. A well-developed and sound financial system fosters a higher standard of living and better overall economic performance.
2. By the financial system we mean markets for financial instruments, such as stocks and bonds, and financial institutions, such as commercial banks, pension funds, and hedge funds, along with the payment system.
3. A major function of the financial system is to transfer resources from surplus units to deficit units. In practice, households and the foreign sectors are suppliers of resources through the U.S. financial system—surplus units—while businesses and the federal government are demanders of these funds—deficit units.
4. When the supply of funds does not match demand, an economic adjustment occurs in which interest rates change—rising when demand exceeds supply and falling when supply exceeds demand. The equilibrating process ensures that the most worthwhile projects get funded.
5. Other important functions performed by the financial system (creating economic value) are providing a variety of financial instruments that better match the objectives of financial market participants; providing a reliable and efficient payment system that encourages more worthwhile economic and financial transactions; providing a means by which risk can be shifted from those less willing and able to bear risk to those with more capacity and appetite for bearing and managing risk; and applying discipline on managers of resources.
6. The financial system is forward looking and continually responding to new information bearing on the value of financial assets; dislikes uncertainty and risk, requiring compensation for greater amounts of risk; is focused on the market for Treasury debt, using interest rates on such debt as benchmarks for pricing other financial instruments; requires that financial institutions hold capital to protect creditors; is increasingly integrated into the global financial system and affected by developments outside the United States.

QUESTIONS

1. How do you think a well-functioning financial system serves to improve economic well-being?
2. How does the life cycle of earnings and spending result in the household sector's being a net supplier—or surplus unit—of funds to the financial system? Are all households suppliers of funds at any given time? Which typically are not?

3. How does the profit maximization condition imply that business investment will move inversely with the level of interest rates?
4. How would a balanced budget amendment to the U.S. Constitution affect the demand for funds by deficit spending units? What would happen to the level of interest rates in the United States?
5. If the amount of savings outside the United States were to shrink, how would this affect conditions in the U.S. financial system? Interest rates in the United States?
6. How does a reliable, efficient payment system affect the level of economic well-being in the United States?
7. What is the current slope of the Treasury yield curve—flat, upward sloping, or downward sloping?
8. What is the current value of the British pound? Euro? Japanese yen? (All measured against the U.S. dollar.)
9. What is the price/earnings (trailing) for Cisco Systems?
10. What was the amount of securities held outright by the Federal Reserve in the most recent week?
11. What was the volume of securities lent by the Federal Reserve in the most recent week?
12. What is the level of the yield on the three-month Treasury bill? The 10-year Treasury note?
13. Chart the level of the 10-year Treasury note from January 1970 to the current period. (Hint: Use the FRED database.) What has been the recent trend? Identify the period of the highest levels of this interest rate? The lowest.
14. What was the most recent interest rate on 10-year interest rate swaps?
15. What is the actual level of the federal funds rate? The target level?

NOTES

1. Central banks are public policy institutions charged with monetary policy and, in many parts of the world, with regulating commercial banks and other parts of the financial system.
2. In practice, the cost of financing can include the cost of raising equity funds, which is usually higher than the cost of borrowing. This will be discussed further in Chapter 8.
3. As we will see in subsequent chapters, not all funds that transfer from surplus to deficit units carry interest rates. Indeed, equity (stocks or shares) is a financial instrument that provides its owner dividends, which are paid out of the business's profits. We will also see in later chapters that a decline in yields—be it in the form of lower interest rates on credit instruments or dividend yields on stocks—results in higher prices on shares or credit instruments. This adds to the value of assets and wealth of household investors, which will induce more spending and less saving.
4. On occasion in recent years, funds coming from investors abroad have been an important influence on U.S. financial markets and the U.S. economy, along the lines of the analysis underlying Figure 1.4. In the early part of the decade of the 2000s, a bulge in saving in other parts of the world—importantly,

Asia—worked its way into the U.S. financial system. In other words, this augmented the amount of surplus funds supplied to the U.S. financial system from other sources and put downward pressure on U.S. interest rates, encouraging more spending by U.S. deficit units. This has been referred to as the *global saving glut*. Ample amounts of funds supplied and the accompanying low interest rates are thought to have been an important contributor to the housing bubble and other financial excesses that developed during that period. The bursting of the bubble was a catalyst for the financial crisis and the economic downturn later in the decade. See Ben S. Bernanke, "The Global Saving Glut and the U.S. Current Account Deficit," Board of Governors of the Federal Reserve System, March 10, 2005.