

Financial Markets and Institutions

CHAPTER 2



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The Economy Depends on a Strong Financial System

History shows that a strong financial system is a necessary ingredient for a growing and prosperous economy. Companies raising capital to finance capital expenditures and investors saving to accumulate funds for future use require well-functioning financial markets and institutions.

Over the past few decades, changing technology and improving communications have increased cross-border transactions and expanded the scope and efficiency of the global financial system. Companies routinely raise funds throughout the world to finance projects all around the globe. Likewise, with the click of a mouse an individual investor in Pittsburgh can deposit funds in a European bank or purchase a mutual fund that invests in Chinese securities.

These innovations helped spur global economic growth by providing capital to an increasing number of individuals throughout the world. Along the way, the financial industry

attracted a lot of talented people who created, marketed, and traded a large number of new financial products. However, despite their benefits many of these same factors led to excesses that culminated in the financial crisis of 2007 and 2008.

In the aftermath of the crisis, the financial sector is slowly recovering, but its effects continue to linger. The crisis also reaffirmed how changes in the value of financial assets can quickly spill over and affect other parts of the economy. For example, a 2014 article in *The Wall Street Journal* described how a dramatic drop in many of the leading hot tech stocks (Facebook, King Digital Entertainment—the maker of Candy Crush Saga, Netflix, Yelp, and Twitter) suddenly made it more difficult for new start-ups to raise money in the initial public offering (IPO) market. A year later in early 2015, at least two of the stocks (Netflix and Facebook) were showing renewed signs of life.

Moreover, there are signs that both the overall economy and the IPO market are beginning to rebound. For example, in January 2015 the burger chain Shake Shack had a stronger than expected IPO, and clients from Goldman Sachs Group put \$1.6 billion into Uber, a mobile-app-based transportation network. But arguably the most dramatic event was when the Chinese online retailer Alibaba raised \$25 billion in September 2014. This turned out to be the largest global IPO in history.

These recent events notwithstanding, managers and investors don't operate in a vacuum—they make decisions within a large and complex financial environment. This environment includes financial markets and institutions, tax and regulatory policies, and the state of the economy. The environment both determines the available financial alternatives and affects the outcome of various decisions. Thus, it is crucial that investors and financial managers have a good understanding of the environment in which they operate.

Sources: Michael J. De La Merced, "Shake Shack More Than Doubles Its I.P.O. Price in Market Debut," *The New York Times* (<http://dealbook.nytimes.com>), January 30, 2015; Mike Isaac and Michael J. De La Merced, "Uber Closes \$1.6 Billion in Financing," *The New York Times* (<http://dealbook.nytimes.com>), January 21, 2015; and Ryan Mac, "Alibaba Claims Title for Largest Global IPO Ever with Extra Share Sales," *Forbes* (www.forbes.com), September 22, 2014.



PUTTING THINGS IN PERSPECTIVE

In Chapter 1, we saw that a firm's primary financial goal is to maximize long-run shareholder value. Shareholder value is ultimately determined in the financial markets; so if financial managers are to make good decisions, they must understand how these markets operate. In addition, individuals make personal investment decisions; so they too need to know something about financial markets and the institutions that operate in those markets. Therefore, in this chapter, we describe the markets where capital is raised, securities are traded, and stock prices are established and the institutions that operate in these markets. We will also discuss the concept of market efficiency and demonstrate how efficient markets help promote the effective allocation of capital.

In recent years, the dramatic price swings in the financial markets that have become increasingly common have led many to question whether markets are always efficient. In response, there has been increased interest in *behavioral finance theory*. This theory focuses on how psychological factors influence individual decisions (sometimes in perverse ways), and the resulting impact these decisions have on financial markets.

When you finish this chapter, you should be able to:

- Identify the different types of financial markets and financial institutions, and explain how these markets and institutions enhance capital allocation.
- Explain how the stock market operates, and list the distinctions between the different types of stock markets.
- Explain how the stock market has performed in recent years.
- Discuss the importance of market efficiency, and explain why some markets are more efficient than others.
- Develop a simple understanding of behavioral finance.



For additional information regarding the financial crisis, students can refer to stlouisfed.org/Financial-Crisis. Another good source can be found at fcic.law.stanford.edu, which focuses on the Financial Crisis Inquiry Commission.

2-1 The Capital Allocation Process

Businesses, individuals, and governments often need to raise capital. For example, Carolina Power & Light Energy (CP&L) forecasts an increase in the demand for electricity in North and South Carolina, so it will build a new power plant to meet those needs. Because CP&L's bank account does not contain the \$1 billion necessary to pay for the plant, the company must raise this capital in the financial markets. Similarly, the proprietor of a San Francisco hardware store wants to expand into appliances. Where will he get the money to buy the initial inventory of TV sets, washers, and freezers? Or suppose the Johnson family wants to buy a home that costs \$200,000, but they have only \$50,000 in savings. Where will they obtain the additional \$150,000? The city of New York needs \$200 million to build a new sewer plant. Where can it obtain this money? Finally, the federal government needs more money than it receives from taxes. Where will the extra money come from?

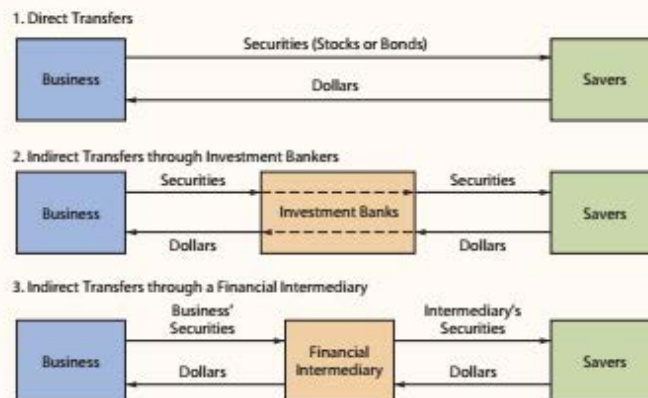
On the other hand, some individuals and firms have incomes that exceed their current expenditures, in which case they have funds available to invest. For example, Carol Hawk has an income of \$36,000, but her expenses are only \$30,000. That leaves her with \$6,000 to invest. Similarly, Microsoft has accumulated roughly \$90.3 billion of cash and marketable securities. What can Microsoft do with this money until it is needed in the business?

People and organizations with surplus funds are saving today in order to accumulate funds for some future use. Members of a household might save to pay for their children's education and the parents' retirement, while a business might save to fund future investments. Those with surplus funds expect to earn a return on their investments, while people and organizations that need capital understand that they must pay interest to those who provide that capital.

In a well-functioning economy, capital flows efficiently from those with surplus capital to those who need it. This transfer can take place in the three ways described in Figure 2.1.

FIGURE 2.1

Diagram of the Capital Formation Process for Business



1. *Direct transfers* of money and securities, as shown in the top section, occur when a business sells its stocks or bonds directly to savers, without going through any type of financial institution. The business delivers its securities to savers, who, in turn, give the firm the money it needs. This procedure is used mainly by small firms, and relatively little capital is raised by direct transfers.
2. As shown in the middle section, transfers may also go through an investment bank (iBank) such as Morgan Stanley, which *underwrites* the issue. An underwriter facilitates the issuance of securities. The company sells its stocks or bonds to the investment bank, which then sells these same securities to savers. The businesses' securities and the savers' money merely "pass through" the investment bank. However, because the investment bank buys and holds the securities for a period of time, it is taking a risk—it may not be able to resell the securities to savers for as much as it paid. Because new securities are involved and the corporation receives the sale proceeds, this transaction is called a *primary market transaction*.
3. Transfers can also be made through a *financial intermediary* such as a bank, an insurance company, or a mutual fund. Here the intermediary obtains funds from savers in exchange for its securities. The intermediary uses this money to buy and hold businesses' securities, and the savers hold the intermediary's securities. For example, a saver deposits dollars in a bank, receiving a certificate of deposit; then the bank lends the money to a business in the form of a mortgage loan. Thus, intermediaries literally create new forms of capital—in this case, certificates of deposit, which are safer and more liquid than mortgages and thus better for most savers to hold. The existence of intermediaries greatly increases the efficiency of money and capital markets.

Often the entity needing capital is a business (and specifically a corporation); but it is easy to visualize the demander of capital being a home purchaser, a small business, or a government unit. For example, if your uncle lends you money to fund a new business, a direct transfer of funds will occur. Alternatively, if you borrow money to purchase a home, you will probably raise the funds through a financial intermediary such as your local commercial bank or mortgage banker. That banker could sell your mortgage to an investment bank, which then might use it as collateral for a bond that is purchased by a pension fund.

In a global context, economic development is highly correlated with the level and efficiency of financial markets and institutions.¹ It is difficult, if not impossible, for an economy to reach its full potential if it doesn't have access to a well-functioning financial system. In a well-developed economy like that of the United States, an extensive set of markets and institutions has evolved over time to facilitate the efficient allocation of capital. To raise capital efficiently, managers must understand how these markets and institutions work; and individuals need to know how the markets and institutions work to earn high rates of returns on their savings.

SelfTest



Name three ways capital is transferred between savers and borrowers.
Why are efficient capital markets necessary for economic growth?

¹For a detailed review of the evidence linking financial development to economic growth, see Ross Levine, "Finance and Growth: Theory and Evidence," Chapter 12 in *Handbook of Economic Growth*, edited by Philippe Aghion and Steven Durlauf (Amsterdam: Elsevier Science, 2005).

2-2 Financial Markets

People and organizations wanting to borrow money are brought together with those who have surplus funds in the *financial markets*. Note that *markets* is plural; there are many different financial markets in a developed economy such as that of the United States. We describe some of these markets and some trends in their development.

2-2A TYPES OF MARKETS

Different financial markets serve different types of customers or different parts of the country. Financial markets also vary depending on the maturity of the securities being traded and the types of assets used to back the securities. For these reasons, it is useful to classify markets along the following dimensions:

1. *Physical asset markets versus financial asset markets.* *Physical asset markets* (also called “tangible” or “real” asset markets) are for products such as wheat, autos, real estate, computers, and machinery. *Financial asset markets*, on the other hand, deal with stocks, bonds, notes, and mortgages. Financial markets also deal with *derivative securities* whose values are *derived* from changes in the prices of other assets. A share of Ford stock is a “pure financial asset,” while an option to buy Ford shares is a derivative security whose value depends on the price of Ford stock.
2. *Spot markets versus futures markets.* **Spot markets** are markets in which assets are bought or sold for “on-the-spot” delivery (literally, within a few days). **Futures markets** are markets in which participants agree today to buy or sell an asset at some future date. For example, a farmer may enter into a futures contract in which he agrees today to sell 5,000 bushels of soybeans 6 months from now at a price of \$9.75 a bushel. To continue that example, a food processor that needs soybeans in the future may enter into a futures contract in which it agrees to buy soybeans 6 months from now. Such a transaction can reduce, or *hedge*, the risks faced by both the farmer and the food processor.
3. *Money markets versus capital markets.* **Money markets** are the markets for short-term, highly liquid debt securities. The New York, London, and Tokyo money markets are among the world’s largest. **Capital markets** are the markets for intermediate- or long-term debt and corporate stocks. The New York Stock Exchange, where the stocks of the largest U.S. corporations are traded, is a prime example of a capital market. There is no hard-and-fast rule, but in a description of debt markets, *short-term* generally means less than 1 year, *intermediate-term* means 1 to 10 years, and *long-term* means more than 10 years.
4. *Primary markets versus secondary markets.* **Primary markets** are the markets in which corporations raise new capital. If GE were to sell a new issue of common stock to raise capital, a primary market transaction would take place. The corporation selling the newly created stock, GE, receives the proceeds from the sale in a primary market transaction. **Secondary markets** are markets in which existing, already outstanding securities are traded among investors. Thus, if Jane Doe decided to buy 1,000 shares of GE stock, the purchase would occur in the secondary market. The New York Stock Exchange is a secondary market because it deals in outstanding, as opposed to newly issued, stocks and bonds. Secondary markets also exist for mortgages, other types of loans, and other financial assets. The corporation whose securities are being traded is not involved in a secondary market transaction and thus does not receive funds from such a sale.

Spot Markets

The markets in which assets are bought or sold for “on-the-spot” delivery.

Futures Markets

The markets in which participants agree today to buy or sell an asset at some future date.

Money Markets

The financial markets in which funds are borrowed or loaned for short periods (less than one year).

Capital Markets

The financial markets for stocks and for intermediate- or long-term debt (one year or longer).

Primary Markets

Markets in which corporations raise capital by issuing new securities.

Secondary Markets

Markets in which securities and other financial assets are traded among investors after they have been issued by corporations.

5. *Private markets versus public markets.* **Private markets**, where transactions are negotiated directly between two parties, are differentiated from **public markets**, where standardized contracts are traded on organized exchanges. Bank loans and private debt placements with insurance companies are examples of private market transactions. Because these transactions are private, they may be structured in any manner to which the two parties agree. By contrast, securities that are traded in public markets (for example, common stock and corporate bonds) are held by a large number of individuals. These securities must have fairly standardized contractual features because public investors do not generally have the time and expertise to negotiate unique, nonstandardized contracts. Broad ownership and standardization result in publicly traded securities being more liquid than tailor-made, uniquely negotiated securities.

Private Markets

Markets in which transactions are worked out directly between two parties.

Public Markets

Markets in which standardized contracts are traded on organized exchanges.

Other classifications could be made, but this breakdown shows that there are many types of financial markets. Also note that the distinctions among markets are often blurred and unimportant except as a general point of reference. For example, it makes little difference if a firm borrows for 11, 12, or 13 months, that is, whether the transaction is a “money” or “capital” market transaction. You should be aware of the important differences among types of markets, but don’t be overly concerned about trying to distinguish them at the boundaries.

A healthy economy is dependent on efficient funds transfers from people who are net savers to firms and individuals who need capital. Without efficient transfers, the economy could not function: Carolina Power & Light Energy could not raise capital, so Raleigh’s citizens would have no electricity; the Johnson family would not have adequate housing; Carol Hawk would have no place to invest her savings; and so forth. Obviously, the level of employment and productivity (i.e., the standard of living) would be much lower. Therefore, it is essential that financial markets function efficiently—not only quickly, but also inexpensively.

Table 2.1 is a listing of the most important instruments traded in the various financial markets. The instruments are arranged in ascending order of typical length of maturity. As we go through this book, we will look in more detail at many of the instruments listed in Table 2.1. For example, we will see that there are many varieties of corporate bonds, ranging from “plain vanilla” bonds to bonds that can be converted to common stocks to bonds whose interest payments vary depending on the inflation rate. Still, the table provides an overview of the characteristics and costs of the instruments traded in the major financial markets.

2-2B RECENT TRENDS

Financial markets have experienced many changes in recent years. Technological advances in computers and telecommunications, along with the globalization of banking and commerce, have led to deregulation, which has increased competition throughout the world. As a result, there are more efficient, internationally linked markets, which are far more complex than what existed a few years ago. While these developments have been largely positive, they have also created problems for policymakers. With these concerns in mind, Congress and regulators have moved to reregulate parts of the financial sector following the 2007–2008 financial crisis. The box titled “Changing Technology Has Transformed Financial Markets” on page 34 illustrates some dramatic examples of how changing technology has transformed financial markets in recent years.

TABLE 2.1 Summary of Major Market Instruments, Market Participants, and Security Characteristics

Instrument (1)	Market (2)	Major Participants (3)	Riskiness (4)	Security Characteristics	
				Original Maturity (5)	Interest Rate on 3/5/15 ^a (6)
U.S. Treasury bills	Money	Sold by U.S. Treasury to finance federal expenditures	Default-free, close to riskless	91 days to 1 year	0.02%
Bankers' acceptances	Money	A firm's note, but one guaranteed by a bank	Low degree of risk if guaranteed by a strong bank	Up to 180 days	0.23%
Commercial paper	Money	Issued by financially secure firms to large investors	Low default risk	Up to 270 days	0.14%
Negotiable certificates of deposit (CDs)	Money	Issued by major money-center commercial banks to large investors	Default risk depends on the strength of the issuing bank	Up to 1 year	0.20%
Money market mutual funds	Money	Invest in Treasury bills, CDs, and commercial paper; held by individuals and businesses	Low degree of risk	No specific maturity (instant liquidity)	0.42%
Eurodollar market time deposits	Money	Issued by banks outside the United States	Default risk depends on the strength of the issuing bank	Up to 1 year	0.15%
Consumer credit, including credit card debt	Money	Issued by banks, credit unions, and finance companies to individuals	Risk is variable	Variable	Variable, but average APR is 11.10%–16.40%
U.S. Treasury notes and bonds	Capital	Issued by U.S. government	No default risk, but price will decline if interest rates rise; hence, there is some risk	2 to 30 years	0.65% on 2-year to 2.71% on 30-year bonds
Mortgages	Capital	Loans to individuals and businesses secured by real estate; bought by banks and other institutions	Risk is variable; risk is high in the case of subprime loans	Up to 30 years	3.36% adjustable 5-year rate, 3.94% 30-year fixed rate
State and local government bonds	Capital	Issued by state and local governments; held by individuals and institutional investors	Riskier than U.S. government securities but exempt from most taxes	Up to 30 years	3.68% 20-year bonds, mixed quality debt

(Continued)

TABLE 2.1

Summary of Major Market Instruments, Market Participants, and Security Characteristics

Security Characteristics					
Instrument (1)	Market (2)	Major Participants (3)	Riskiness (4)	Original Maturity (5)	Interest Rate on 3/5/15 ^a (6)
Corporate bonds	Capital	Issued by corporations; held by individuals and institutional investors	Riskier than U.S. government securities but less risky than preferred and common stocks; varying degree of risk within bonds depends on strength of issuer	Up to 40 years ^b	3.71% on AAA bonds, 4.58% on BBB bonds
Leases	Capital	Similar to debt in that firms can lease assets rather than borrow and then buy the assets	Risk similar to corporate bonds	Generally 3 to 20 years	Similar to bond yields
Preferred stocks	Capital	Issued by corporations to individuals and institutional investors	Generally riskier than corporate bonds but less risky than common stock	Unlimited	5.75% to 9.5%
Common stocks ^c	Capital	Issued by corporations to individuals and institutional investors	Riskier than bonds and preferred stock; risk varies from company to company	Unlimited	NA

Notes:

^aThe yields reported are from The Wall Street Journal (online.wsj.com), March 5, 2015, and Board of Governors of the Federal Reserve System, "Selected Interest Rates (Dulley)," www.federalreserve.gov/releases/H15/update. Money market rates assume a 3-month maturity.

^bA few corporations have issued 100-year bonds; however, the majority has issued bonds with maturities that are less than 40 years.

^cWhile common stocks do not pay interest, they are expected to provide a "return" in the form of dividends and capital gains. Historically, stock returns have averaged between 9% and 12% a year, but they can be much higher or lower in a given year. Of course, if you purchase a stock, your actual return may be considerably higher or lower than these historical averages.

Changing Technology Has Transformed Financial Markets

In recent years, changing technology has created numerous innovations and has dramatically transformed the operation of financial markets. Here are just a few interesting examples:

- Changing technology has created a whole class of firms that use computer algorithms to buy and sell securities, often at speeds less than a second. The trades conducted by these high-frequency trading (HFT) firms now represent a very significant fraction of the total trading volume in a given day. Proponents argue that these HFT firms generate liquidity, which helps reduce transactions costs and makes it easier for other investors to get in and out of the market. Critics argue that these activities can create market instability and that HFT firms often engage in trades that are self-serving to their own interests, to the detriment of other investors. A recent best-selling book by Michael Lewis, titled *Flash Boys*, attracted a lot of attention for its highly critical depiction of HFT firms.
- Changing technology has changed the way that many people pay for transactions. Many of us rarely use cash anymore and instead often rely on debit and credit cards for payment. Others often use electronic commerce services such as PayPal to make online payments. More recently, there has been a growing interest in Bitcoin—a virtual currency that involves no intermediary and has no fees.² Although intriguing, many are concerned that the lack of regulation makes Bitcoin an attractive vehicle for illegal transactions and that investors in the currency lack any legal protection against fraudulent activities.³
- Changing technology has allowed some individuals and firms to bypass intermediaries and directly raise money from investors to help fund various projects. This activity is referred to as *crowdfunding*. Two leading examples of these platforms include Kickstarter and Indiegogo.⁴

Globalization has exposed the need for greater cooperation among regulators at the international level, but the task is not easy. Factors that complicate coordination include (1) the different structures in nations' banking and securities industries; (2) the trend toward financial services conglomerates, which obscures developments in various market segments; and (3) the reluctance of individual countries to give up control over their national monetary policies. Still, regulators are unanimous about the need to close the gaps in the supervision of worldwide markets.

Another important trend in recent years has been the increased use of derivatives. A derivative is any security whose value is *derived* from the price of some other “underlying” asset. An option to buy IBM stock is a derivative, as is a contract to buy Japanese yen six months from now. The value of the IBM option depends on the price of IBM's stock and the value of the Japanese yen “future” depends on the exchange rate between yen and dollars. The market for derivatives has grown faster than any other market in recent years, providing investors with new opportunities but also exposing them to new risks.

Derivatives

Any financial asset whose value is derived from the value of some other “underlying” asset.

²For a concise review of Bitcoin, see Tal Yellin, Dominic Aratari, and Jose Pagliery, “What Is Bitcoin?” *CNN Money* (money.cnn.com), January 2014.

³Despite these concerns, many believe that Bitcoin would become an important part of the global economy. See, for example, a recent article by Paul Vigna and Michael J. Casey, “BitBeat: The Fed's Surprisingly Warm Take on Bitcoin,” *The Wall Street Journal* (blogs.wsj.com), May 19, 2014.

⁴For a discussion of the role that these groups play in the funding process, see “Where Do Crowdfunding Platforms Fit in Venture Capital?” *The Wall Street Journal* (blogs.wsj.com), May 2, 2014.

To illustrate the growing importance of derivatives, consider the case of *credit default swaps*.⁵ Credit default swaps are contracts that offer protection against the default of a particular security. Suppose a bank wants to protect itself against the default of one of its borrowers. The bank could enter into a credit default swap where it agrees to make regular payments to another financial institution. In return, that financial institution agrees to insure the bank against losses that would occur if the borrower defaulted.

Derivatives can be used to reduce risks or to speculate. Suppose a wheat processor's costs rise and its net income falls when the price of wheat rises. The processor could reduce its risk by purchasing derivatives—wheat futures—whose value increases when the price of wheat rises. This is a *hedging operation*, and its purpose is to reduce risk exposure. Speculation, on the other hand, is done in the hope of high returns; but it raises risk exposure. For example, several years ago Procter & Gamble disclosed that it lost \$150 million on derivative investments. More recently, losses on mortgage-related derivatives helped contribute to the credit collapse in 2008.

If a bank or any other company reports that it invests in derivatives, how can one tell if the derivatives are held as a hedge against something like an increase in the price of wheat or as a speculative bet that wheat prices will rise? The answer is that it is very difficult to tell how derivatives are affecting the firm's risk profile. In the case of financial institutions, things are even more complicated—the derivatives are generally based on changes in interest rates, foreign exchange rates, or stock prices; and a large international bank might have tens of thousands of separate derivative contracts. The size and complexity of these transactions concern regulators, academics, and members of Congress. Former Fed Chairperson Alan Greenspan noted that in theory, derivatives should allow companies to better manage risk, but that it is not clear whether recent innovations have "increased or decreased the inherent stability of the financial system."

SelfTest



- Distinguish between physical asset markets and financial asset markets.
- What's the difference between spot markets and futures markets?
- Distinguish between money markets and capital markets.
- What's the difference between primary markets and secondary markets?
- Differentiate between private and public markets.
- Why are financial markets essential for a healthy economy and economic growth?

2-3 Financial Institutions

Direct funds transfers are common among individuals and small businesses and in economies where financial markets and institutions are less developed. But large businesses in developed economies generally find it more efficient to enlist the services of a financial institution when it comes time to raise capital.

⁵A 2010 article in *The New York Times* reported that this market had grown from \$900 billion in 2000 to more than \$30 trillion in 2008. The article also describes how credit default swaps helped contribute to the 2007–2008 financial crises in the United States and Europe. Refer to "Times Topics: Credit Default Swaps," *The New York Times* (topics.nytimes.com), March 10, 2010.

In the United States and other developed nations, a set of highly efficient financial intermediaries has evolved. Their original roles were generally quite specific, and regulation prevented them from diversifying. However, in recent years regulations against diversification have been largely removed; and today the differences between institutions have become blurred. Still, there remains a degree of institutional identity. Therefore, it is useful to understand the major categories of financial institutions. Keep in mind, though, that one company can own a number of subsidiaries that engage in the different functions described next.

Investment Bank

An organization that underwrites and distributes new investment securities and helps businesses obtain financing.

Commercial Bank

The traditional department store of finance serving a variety of savers and borrowers.

Financial Services Corporation

A firm that offers a wide range of financial services, including investment banking, brokerage operations, insurance, and commercial banking.

1. **Investment banks** traditionally help companies raise capital. They (1) help corporations design securities with features that are currently attractive to investors, (2) buy these securities from the corporation, and (3) resell them to savers. Because the investment bank generally guarantees that the firm will raise the needed capital, the investment bankers are also called *underwriters*. The recent credit crisis has had a dramatic effect on the investment banking industry. Bear Stearns collapsed and was later acquired by JP Morgan, Lehman Brothers went bankrupt, and Merrill Lynch was forced to sell out to Bank of America. The two “surviving” major investment banks (Morgan Stanley and Goldman Sachs) received Federal Reserve approval to become commercial bank holding companies.
2. **Commercial banks**, such as Bank of America, Citibank, Wells Fargo, and JP Morgan Chase, are the traditional “department stores of finance” because they serve a variety of savers and borrowers. Historically, commercial banks were the major institutions that handled checking accounts and through which the Federal Reserve System expanded or contracted the money supply. Today, however, several other institutions also provide checking services and significantly influence the money supply. Note too that the larger banks are generally part of financial services corporations as described next.⁶
3. **Financial services corporations** are large conglomerates that combine many different financial institutions within a single corporation. Most financial services corporations started in one area but have now diversified to cover most of the financial spectrum. For example, Citigroup owns Citibank (a commercial bank), an investment bank, a securities brokerage organization, insurance companies, and leasing companies.
4. **Credit unions** are cooperative associations whose members are supposed to have a common bond, such as being employees of the same firm. Members’ savings are loaned only to other members, generally for auto purchases, home improvement loans, and home mortgages. Credit unions are often the cheapest source of funds available to individual borrowers.
5. **Pension funds** are retirement plans funded by corporations or government agencies for their workers and administered primarily by the trust departments of commercial banks or by life insurance companies. Pension funds invest primarily in bonds, stocks, mortgages, and real estate.
6. **Life insurance companies** take savings in the form of annual premiums; invest these funds in stocks, bonds, real estate, and mortgages; and make payments to the beneficiaries of the insured parties. In recent years, life insurance companies have also offered a variety of tax-deferred savings plans designed to provide benefits to participants when they retire.

⁶Two other institutions that were important a few years ago were *savings and loan associations* and *mutual savings banks*. Most of these organizations have now been merged into commercial banks.

7. **Mutual funds** are corporations that accept money from savers and then use these funds to buy stocks, long-term bonds, or short-term debt instruments issued by businesses or government units. These organizations pool funds and thus reduce risks by diversification. They also achieve economies of scale in analyzing securities, managing portfolios, and buying and selling securities. Different funds are designed to meet the objectives of different types of savers. Hence, there are bond funds for those who prefer safety, stock funds for savers who are willing to accept significant risks in the hope of higher returns, and **money market funds** that are used as interest-bearing checking accounts.

Another important distinction exists between actively managed funds and indexed funds. *Actively managed funds* try to outperform the overall markets, whereas *indexed funds* are designed to simply replicate the performance of a specific market index. For example, the portfolio manager of an actively managed stock fund uses his or her expertise to select what he or she thinks will be the best-performing stocks over a given time period. By contrast, an index fund that tracks the S&P 500 index will simply hold the basket of stocks that comprise the S&P 500. Both types of funds provide investors with valuable diversification, but actively managed funds typically have much higher fees—in large part, because of the extra costs involved in trying to select stocks that will (hopefully) outperform the market. In any given year, the very best actively managed funds will outperform the market index, but many will do worse than the overall market—even before taking into account their higher fees. Furthermore, it is extremely difficult to predict which actively managed funds will beat the market in a particular year. For this reason, many academics and practitioners have encouraged investors to rely more heavily on indexed funds.⁷

There are literally thousands of different mutual funds with dozens of different goals and purposes. Excellent information on the objectives and past performances of the various funds are provided in publications such as *Value Line Investment Survey* and *Morningstar Mutual Funds*, which are available in most libraries and on the Internet.

8. **Exchange Traded Funds (ETFs)** are similar to regular mutual funds and are often operated by mutual fund companies. ETFs buy a portfolio of stocks of a certain type—for example, the S&P 500 or media companies or Chinese companies—and then sell their own shares to the public. ETF shares are generally traded in the public markets, so an investor who wants to invest in the Chinese market, for example, can buy shares in an ETF that holds stocks in that particular market.
9. **Hedge funds** are also similar to mutual funds because they accept money from savers and use the funds to buy various securities, but there are some important differences. While mutual funds (and ETFs) are registered and regulated by the Securities and Exchange Commission (SEC), hedge funds are largely unregulated. This difference in regulation stems from the fact that mutual funds typically target small investors, whereas hedge funds typically have large minimum investments (often exceeding \$1 million) and are marketed primarily to institutions and individuals with high net worths. Hedge funds received their name because they traditionally were used when an individual was trying to hedge risks. For example, a hedge

Mutual Funds

Organizations that pool investor funds to purchase financial instruments and thus reduce risks through diversification.

Money Market Funds

Mutual funds that invest in short-term, low-risk securities and allow investors to write checks against their accounts.

⁷Refer to Mark Hulbert, "The Index Funds Win Again," *The New York Times* (www.nytimes.com), February 21, 2009; and Rick Ferri, "Index Fund Portfolios Reign Superior," *Forbes* (www.forbes.com), August 20, 2012.

fund manager who believes that interest rate differentials between corporate and Treasury bonds are too large might simultaneously buy a portfolio of corporate bonds and sell a portfolio of Treasury bonds. In this case, the portfolio would be “hedged” against overall movements in interest rates, but it would perform especially well if the spread between these securities became smaller.

However, some hedge funds take on risks that are considerably higher than that of an average individual stock or mutual fund. For example, in 1998, Long-Term Capital Management (LTCM), a high-profile hedge fund (whose managers included several well-respected practitioners as well as two Nobel Prize-winning professors who were experts in investment theory), made some incorrect assumptions and “blew up.”⁸ LTCM had many billions of dollars under management, and it owed large amounts of money to a number of banks. To avert a worldwide crisis, the Federal Reserve orchestrated a buyout of the firm with a group of New York banks.

Table 2.2 lists the 10 largest hedge funds as of January 2, 2015. As evidence of their growing importance, each of these funds controls more than \$25 billion in assets. As hedge funds have become more popular, many of them have begun to lower their minimum investment requirements. Perhaps not surprisingly, their rapid growth and shift toward smaller investors have also led to a call for more regulation.

10. *Private equity companies* are organizations that operate much like hedge funds; but rather than purchasing some of the stock of a firm, private equity players buy and then manage entire firms. Most of the money used to buy the target companies is borrowed. While private equity activity slowed around the financial crisis, over the past decade a number of high-profile companies (including Harrah’s Entertainment, Albertson’s, Neiman Marcus, and Clear Channel) have been acquired by private equity firms. More recently in 2013, two major deals were announced. Berkshire Hathaway (and its chairman Warren Buffett) partnered with the private equity firm 3G Capital to acquire H.J. Heinz Co. on June 7, 2013, for \$28 billion. On October 29, 2013, Dell

Ten Largest Hedge Funds as of January 2, 2015 **TABLE 2.2**

Fund	Assets under Management (\$ in billions)
Bridgewater Associates	169.5
AQR Capital Management	64.9
Man Investments	50.0
Och-Ziff Capital Management Group	47.2
Standard Life Investments	35.3
BlackRock Alternative Investors	31.8
Winton Capital Management	31.1
Viking Global Investors	30.3
Millennium Management	29.2
Lone Pine Capital	29.0

Source: Michelle Jones, “Biggest Hedge Funds Nab (Almost) All of the Assets,” *ValueWalk* (www.valuewalk.com), May 27, 2015.

⁸See Franklin Edwards, “Hedge Funds and the Collapse of Long-Term Capital Management,” *Journal of Economic Perspectives*, vol. 13, no. 2 (Spring 1999), pp. 189–210, for a thoughtful review of the implications of the collapse of Long-Term Capital Management.

Computer completed its deal to go private with the assistance of the private equity firm, Silver Lake Partners, for \$24.9 billion. Other leading private equity firms include The Carlyle Group, Kohlberg Kravis Roberts, and The Blackstone Group.

With the exception of hedge funds and private equity companies, financial institutions are regulated to ensure the safety of these institutions and to protect investors. Historically, many of these regulations—which have included a prohibition on nationwide branch banking, restrictions on the types of assets the institutions could purchase, ceilings on the interest rates they could pay, and limitations on the types of services they could provide—tended to impede the free flow of capital and thus hurt the efficiency of the capital markets. Recognizing this fact, policymakers took several steps during the 1980s and 1990s to deregulate financial services companies. For example, the restriction barring nationwide branching by banks was eliminated in 1999.

Many believed that excessive deregulation and insufficient supervision of the financial sector was partially responsible for the 2007–2008 financial crisis. With these concerns in mind, Congress passed the Dodd-Frank Act. The legislation's main goals are to create a new agency for consumer protection, work to increase the transparency of derivative transactions, and force financial institutions to take steps to limit excessive risk taking and to hold more capital.

Panel A of Table 2.3 lists the 10 largest U.S. bank holding companies, and Panel B shows the leading world banking companies. Among the world's 10 largest, only one is based in the United States. While U.S. banks have grown dramatically as a result of recent mergers, they are still small by global standards. Panel C of the table lists the 10 leading global IPO underwriters in terms of dollar volume of new equity issues. Seven of the top underwriters are also listed as major commercial banks or are part of bank holding companies shown in Panels A and B, which confirms the continued blurring of distinctions between different types of financial institutions.

Largest Banks and Underwriters **TABLE 2.3**

Panel A U.S. Bank Holding Companies^a	Panel B World Banking Companies^b	Panel C Leading Global IPO Underwriters^c
JPMorgan Chase & Co.	Industrial & Commercial Bank of China Ltd (China)	Credit Suisse
Bank of America Corp.	China Construction Bank Corporation (China)	Morgan Stanley
Citigroup Inc.	BNP Paribas SA (France)	Citi
Wells Fargo & Co.	Agricultural Bank of China Ltd (China)	BofA Merrill Lynch
Goldman Sachs Group, Inc.	Bank of China Ltd (China)	Goldman Sachs
Morgan Stanley	Deutsche Bank AG (Germany)	JPMorgan
General Electric Capital Corp.	Barclays Bank PLC (UK)	Barclays
U.S. Bancorp	Credit Agricole SA (France)	Jefferies & Co.
Bank of New York Mellon Corp.	Japan Post Bank Co. Ltd (Japan)	Deutsche Bank
PNC Financial Services Group, Inc.	JPMorgan Chase Bank National Assoc. (USA)	Piper Jaffray

Notes:

^aRanked by total assets as of December 31, 2014.

Source: National Information Center, www.ftic.gov/nicpubweb/nicweb/Top50Form.aspx.

^bRanked by total assets from balance sheet information available on November 25, 2014.

Source: www.accuity.com/useful-links/bank-rankings.

^cRanked by dollar amount raised through new IPO issues in 2014. For this ranking, the lead underwriter (manager) is given credit for the entire issue.

Source: www.renaissancecapital.com/ipo/home/underwriter/urankings.aspx?list=proceeds&nav=f&StartDate=1/1/2014&EndDate=12/31/2014.

SECURITIZATION HAS DRAMATICALLY TRANSFORMED THE BANKING INDUSTRY

At one time, commercial banking was a simpler business than it is today. A typical bank received money from its depositors and used it to make loans. In the vast majority of cases, the banker held the loan on its books until it matured. Because they originated the loan and continued to hold it on their books, the banks generally knew the risks involved. However, because banks often had limited funding, there was a cap on the number of loans they could hold on their books. And because most of the loans were made to individuals and businesses in their local market, banks were less able to spread their risk.

To address these concerns, financial engineers came up with the idea of securitizing loans. This is a process whereby an agent (such as an investment bank) creates an entity that buys a large number of loans from a wide range of banks and then issues securities that are backed by the loan payments. Securitization began in the 1970s when government-backed entities purchased pools of home mortgages and then issued securities backed by the cash flows from the diversified portfolio of mortgages. In many respects, securitization was a tremendous innovation. Banks no longer had to hold their mortgages, so they could quickly convert the originated loan to cash, enabling them to redeploy their capital to make other loans. At the same time, the newly created securities gave investors an opportunity to invest in a diversified portfolio of home mortgages. In addition, these securities traded on the open market so that investors were able to easily buy and sell them as their circumstances and views of the mortgage markets changed over time.

Over the last few decades, this process has accelerated. Bankers have securitized different types of loans into all types of different securities. One notable example is *collateralized debt obligations (CDOs)*, where an entity issues several classes of securities backed by a portfolio of loans. For example, an investment bank purchases \$100 million of mortgage loans from banks and mortgage brokers throughout the country. The investment bank uses the collateral to create \$100 million in new securities, which are divided into three classes (often referred to as *tranches*). The Class A bonds have the first claim

on the cash flows from the mortgages. Because they have the first claim, they are the least risky and are rated AAA by the rating agencies. The Class B bonds get paid after the Class A bonds are paid, but they too will generally have a high rating. Finally, the Class C bonds get paid. Because they are last in line, they will have the highest risk, but they will also sell for the lowest price. If the underlying mortgages perform well, the C bonds will realize the highest returns, but they will suffer the most if the underlying mortgages don't perform well.

CDOs backed by pools of higher risk (subprime) mortgages played a major role in the 2007–2008 financial crisis. During the housing boom, financial institutions and mortgage brokers originated a large number of new mortgages, and investment bankers hungry for fees were more than happy to create new CDOs backed by these subprime mortgages. The securities created through these CDOs were sold primarily to other commercial and investment banks and to other financial institutions, such as hedge funds, mutual funds, and pension funds. Buoyed by the mistaken belief that housing prices would never fall, many viewed these securities as solid investments, and they received additional comfort from the fact that they were highly rated.

When the housing market collapsed, the value of these securities plummeted, destroying the balance sheets of many financial institutions. Making matters worse, it became very hard to value these securities because they were backed by such a large, diverse pool of mortgages. Not sure what they had on their books, many institutions tried to sell these securities at the same time, and the “rush to the exit” further depressed prices, causing the cycle to deepen.

Following the crisis, many have looked to reform the securitization business, and others have criticized the rating agencies for routinely assigning high credit ratings to what in hindsight were extremely risky securities. At the same time, an article in *Barron's* highlights the important role that securitization plays in the capital markets and raises concerns that the economy won't thrive again until the securitization business recovers.

Source: David Adler, “A Flat Dow for 10 Years? Why It Could Happen,” *Barron's* (online.barrons.com), December 28, 2009.

SelfTest



What's the difference between a commercial bank and an investment bank?

List the major types of financial institutions, and briefly describe the primary function of each.

What are some important differences between mutual funds, Exchange Traded Funds, and hedge funds? How are they similar?

2-4 The Stock Market

As noted earlier, outstanding, previously issued securities are traded in the secondary markets. By far, the most active secondary market—and the most important one to financial managers—is the *stock market*, where the prices of firms' stocks are established. Because the primary goal of financial managers is to maximize their firms' stock prices, knowledge of the stock market is important to anyone involved in managing a business.

There are a number of different stock markets. The two leaders are NYSE Euronext and NASDAQ. NYSE Euronext was formed through the 2007 merger of the New York Stock Exchange (NYSE) and Euronext, which at the time was the largest European exchange. Stocks are traded using a variety of market procedures, but there are two basic types: (1) *physical location exchanges*, which include the NYSE and several regional stock exchanges, and (2) *electronic dealer-based markets*, which include the NASDAQ, the less formal over-the-counter market, and the recently developed electronic communications networks (ECNs).

(See the box titled "The NYSE and NASDAQ Go Global.") Because the physical location exchanges are easier to describe and understand, we discuss them first.

2-4A PHYSICAL LOCATION STOCK EXCHANGES

Physical location exchanges are tangible entities. Each of the larger exchanges occupies its own building, allows a limited number of people to trade on its floor, and has an elected governing body—its board of governors. Members of the NYSE formerly had "seats" on the exchange, although everybody stood. Today the seats have been exchanged for trading licenses, which are auctioned to member organizations and cost about \$50,000 per year. Most of the larger investment banks operate *brokerage departments*. They purchase seats on the exchanges and designate one or more of their officers as members. The exchanges are open on all normal working days, with the members meeting in a large room equipped with telephones and other electronic equipment that enable each member to communicate with his or her firm's offices throughout the country.

Like other markets, security exchanges facilitate communication between buyers and sellers. For example, Goldman Sachs (the fifth-largest brokerage firm) might receive an order from a customer who wants to buy shares of GE stock. Simultaneously, Morgan Stanley (the second-largest brokerage firm) might receive an order from a customer wanting to sell shares of GE. Each broker communicates electronically with the firm's representative on the NYSE. Other brokers throughout the country are also communicating with their own exchange members. The exchange members with *sell orders* offer the shares for sale, and they are bid for by the members with *buy orders*. Thus, the exchanges operate as *auction markets*.⁹

Physical Location Exchanges

Formal organizations having tangible physical locations that conduct auction markets in designated ("listed") securities.

⁹The NYSE is actually a modified auction market wherein people (through their brokers) bid for stocks. Originally—in 1792—brokers would literally shout, "I have 100 shares of Erie for sale; how much am I offered?" and then sell to the highest bidder. If a broker had a buy order, he or she would shout, "I want to buy 100 shares of Erie; who'll sell at the best price?" The same general situation still exists, although the exchanges now have members known as *specialists* who facilitate the trading process by keeping an inventory of shares of the stocks in which they specialize. If a buy order comes in at a time when no sell order arrives, the specialist will sell some inventory. Similarly, if a sell order comes in, the specialist will buy and add to inventory. The specialist sets a *bid price* (the price the specialist will pay for the stock) and an *ask price* (the price at which shares will be sold out of inventory). The bid and ask prices are set at levels designed to keep the inventory in balance. If many buy orders start coming in because of favorable developments, or many sell orders come in because of unfavorable events, the specialist will raise or lower prices to keep supply and demand in balance. Bid prices are somewhat lower than ask prices, with the difference, or *spread*, representing the specialist's profit margin. Special facilities are available to help institutional investors such as mutual or pension funds sell large blocks of stock without depressing their prices. In essence, brokerage houses that cater to institutional clients will purchase blocks (defined as 10,000 or more shares) and then resell the stock to other institutions or individuals. Also, when a firm has a major announcement that is likely to cause its stock price to change sharply, it will ask the exchange to halt trading in its stock until the announcement has been made and the resulting information has been digested by investors.



GLOBAL PERSPECTIVES

The NYSE and NASDAQ Go Global

Advances in computers and telecommunications that spurred consolidation in the financial services industry have also promoted online trading systems that bypass the traditional exchanges. These systems, which are known as *electronic communications networks (ECNs)*, use electronic technology to bring buyers and sellers together. The rise of ECNs accelerated the move toward 24-hour trading. U.S. investors who wanted to trade after the U.S. markets closed could utilize an ECN, thus bypassing the NYSE and NASDAQ.

Recognizing the new threat, the NYSE and NASDAQ took action. First, both exchanges went public, which enabled them to use their stock as “currency” that could be used to buy ECNs and other exchanges across the globe. For example, NASDAQ acquired the Philadelphia Stock Exchange, several ECNs, and 25% of the London Stock Exchange; and it is actively seeking to merge with other exchanges around the world. The NYSE took similar actions, including a merger with the largest European

exchange, Euronext, to form NYSE Euronext and then acquiring the American Stock Exchange (AMEX).

More recently, the NYSE Euronext itself became a takeover target, when it was recently acquired by the Intercontinental Exchange (ICE). The deal combined ICE’s futures, over-the-counter, and derivatives trading with the NYSE’s stock trading. The takeover received final regulatory approval in 2013. On June 24, 2014, ICE spun off Euronext.

These actions illustrate the growing importance of global trading, especially electronic trading. Indeed, many pundits have concluded that the floor traders who buy and sell stocks on the NYSE and other physical exchanges will soon become a thing of the past. That may or may not be true, but it is clear that stock trading will continue to undergo dramatic changes in the upcoming years. To find a wealth of up-to-date information on the NYSE and NASDAQ, go to Google (or another search engine) and do NYSE history and NASDAQ history searches.

Sources: John McCrank and Luke Jeffs, “ICE to Buy NYSE Euronext for \$8.2 Billion” www.reuters.com, December 20, 2012; Inti Landauro, “ICE Plans Euronext IPO,” *The Wall Street Journal* (online.wsj.com), May 27, 2014; and Alex Gavriish, “Euronext NV: Recent Spin-Off Warrants Further Monitoring,” *ValueWalk* (www.valuewalk.com), August 25, 2014.

2-4B OVER-THE-COUNTER (OTC) AND THE NASDAQ STOCK MARKETS

Over-the-Counter (OTC) Market

A large collection of brokers and dealers, connected electronically by telephones and computers, that provides for trading in unlisted securities.

Dealer Markets

Include all facilities that are needed to conduct security transactions not conducted on the physical location exchanges.

Although the stocks of most large companies trade on the NYSE, a larger number of stocks trade off the exchange in what was traditionally referred to as the **over-the-counter (OTC) market**. An explanation of the term *over-the-counter* will help clarify how this term arose. As noted earlier, the exchanges operate as auction markets—buy and sell orders come in more or less simultaneously, and exchange members match these orders. When a stock is traded infrequently, perhaps because the firm is new or small, few buy and sell orders come in, and matching them within a reasonable amount of time is difficult. To avoid this problem, some brokerage firms maintain an inventory of such stocks and stand prepared to make a market for them. These “dealers” buy when individual investors want to sell, and they sell part of their inventory when investors want to buy. At one time, the inventory of securities was kept in a safe; and the stocks, when bought and sold, were literally passed over the counter.

Today these markets are often referred to as **dealer markets**. A dealer market includes all facilities that are needed to conduct security transactions, but the transactions are not made on the physical location exchanges. The dealer market system consists of (1) the relatively few *dealers* who hold inventories of these securities and who are said to “make a market” in these securities; (2) the thousands of brokers who act as *agents* in bringing the dealers together with investors; and (3) the computers, terminals, and electronic networks that provide a communication link between dealers and brokers. The dealers who make a market in a particular stock quote the price at which they will pay for the stock (the *bid price*) and the price at which they will sell shares (the *ask price*). Each dealer’s prices, which are adjusted as supply and demand conditions change, can be seen on computer screens across

the world. The *bid-ask spread*, which is the difference between bid and ask prices, represents the dealer's markup, or profit. The dealer's risk increases when the stock is more volatile or when the stock trades infrequently. Generally, we would expect volatile, infrequently traded stocks to have wider spreads in order to compensate the dealers for assuming the risk of holding them in inventory.

Brokers and dealers who participate in the OTC market are members of a self-regulatory body known as the *Financial Industry Regulatory Authority* (FINRA), which licenses brokers and oversees trading practices. The computerized network used by FINRA is known as NASDAQ, which originally stood for "National Association of Securities Dealers Automated Quotations."

NASDAQ started as a quotation system, but it has grown to become an organized securities market with its own listing requirements. Over the past decade, the competition between the NYSE and NASDAQ has become increasingly fierce. As noted earlier, the NASDAQ has invested in the London Stock Exchange and other market makers, while the NYSE merged with Euronext (which was later spun off) and was purchased by Intercontinental Exchange—further adding to the competition. Because most of the larger companies trade on the NYSE, the market capitalization of NYSE-traded stocks is much higher than for stocks traded on NASDAQ.

Interestingly, many high-tech companies such as Microsoft, Google, and Intel have remained on NASDAQ even though they meet the listing requirements of the NYSE. At the same time, however, other high-tech companies have left NASDAQ for the NYSE. Despite these defections, NASDAQ's growth over the past decade has been impressive. In the years ahead, competition between NASDAQ and NYSE will no doubt remain fierce.

SelfTest



What are the differences between the physical location exchanges and the NASDAQ stock market?

What is the bid-ask spread?

2-5 The Market for Common Stock

Some companies are so small that their common stocks are not actively traded; they are owned by relatively few people, usually the companies' managers. These firms are said to be *privately owned*, or *closely held corporations*; and their stock is called *closely held stock*. In contrast, the stocks of most large companies are owned by thousands of investors, most of whom are not active in management. These companies are called *publicly owned corporations*, and their stock is called *publicly held stock*.

Closely Held Corporation

A corporation that is owned by a few individuals who are typically associated with the firm's management.

2-5A TYPES OF STOCK MARKET TRANSACTIONS

We can classify stock market transactions into three distinct categories:

1. *Outstanding shares of established publicly owned companies that are traded: the secondary market.* Allied Food Products, the company we study in Chapters 3 and 4, has 50 million shares of stock outstanding. If the owner of 100 shares sells his or her stock, the trade is said to have occurred in the *secondary market*. Thus, the market for outstanding shares, or *used shares*, is the secondary market. The company receives no new money when sales occur in this market.

Publicly Owned Corporation

A corporation that is owned by a relatively large number of individuals who are not actively involved in the firm's management.

2. *Additional shares sold by established publicly owned companies: the primary market.* If Allied Food decides to sell (or issue) an additional 1 million shares to raise new equity capital, this transaction is said to occur in the *primary market*.¹⁰
3. *Initial public offerings made by privately held firms: the IPO market.* Whenever stock in a closely held corporation is offered to the public for the first time, the company is said to be **going public**. The market for stock that is just being offered to the public is called the **initial public offering (IPO) market**.¹¹ In the summer of 2004, Google sold shares to the public for the first time at \$85 per share. By March 2015, the stock was selling for more than \$575. In 2006, McDonald's owned Chipotle Mexican Grill. McDonald's then sold its shares to the public for about \$47.50 to raise capital to support its core business; and by March 2015, Chipotle's stock price was more than \$670. In some more recent examples, General Motors (GM) went public as part of its reorganization following its government bailout. In May 2011, the professional-networking site LinkedIn Corp. created excitement when shares of its IPO more than doubled during its first day of trading. In 2013, Twitter went public at an offer price of \$26 per share; a day later its price had jumped to an intra-day high above \$50 per share. In March 2015, its price has cooled off a bit and is in the neighborhood of \$47 per share. And, of course, Alibaba's initial stock price on September 19, 2014, was \$68 but by close its price had risen 38% to \$93.89. In early March 2015, its price has simmered somewhat to around \$85 per share.

Going Public

The act of selling stock to the public at large by a closely held corporation or its principal stockholders.

Initial Public Offering (IPO) Market

The market for stocks of companies that are in the process of going public.



For information on IPOs, refer to Professor Jay Ritter's (University of Florida) web page site.warrington.ufl.edu/ritter/ipo-data/.

The number of new IPOs rises and falls with the stock market. When the market is strong, many companies go public to bring in new capital and to give their founders an opportunity to cash out some of their shares. As you might expect, not all IPOs are as well received as Google, Chipotle, and LinkedIn. The most striking example is Facebook, which had the largest and highest-profile IPO of 2012. Amid much fanfare, the company went public on May 18, 2012, at a price of \$38 per share. In the two weeks after the IPO, the stock had fallen to below \$28, and just a few months later in September, the price reached a low of \$17.55. By year-end 2012, the stock rebounded to \$26.62, which was still 30% below the initial offering price. So, although Facebook raised a lot of money through its IPO, its initial investors did not quickly realize the big return that many were looking to capture. However, it is important to note that despite its rocky start, investors who continued to hold Facebook stock did quite well. In contrast, the box, titled "Initial Buzz Surrounding IPOs Doesn't Always Translate into Long-Lasting Success," demonstrates Twitter's disappointing post-IPO performance, despite a much higher first day return.

Even if you are able to identify a "hot" issue, it is often difficult to purchase shares in the initial offering. These deals are often *oversubscribed*, which means that the demand for shares at the offering price exceeds the number of shares issued. In such instances, investment bankers favor large institutional investors (who are their best customers); and small investors find it hard, if not impossible, to get in on the ground floor. They can buy the stock in the aftermarket; but evidence suggests that when an investor does not get in on the ground floor, over the long run IPOs often

¹⁰Allied has 60 million shares authorized but only 50 million outstanding; thus, it has 10 million authorized but unissued shares. If it had no authorized but unissued shares, management could increase the authorized shares by obtaining stockholders' approval, which would generally be granted without any arguments.

¹¹A number of years ago Coors, the beer company, offered some of its shares to the public. These shares were designated Class B, and they were nonvoting. The Coors family retained the founders' shares, called Class A stock, which carried full voting privileges. This illustrates how the managers of a company can use different classes of shares to maintain control.

INITIAL BUZZ SURROUNDING IPOs DOESN'T ALWAYS TRANSLATE INTO LONG-LASTING SUCCESS

A recent article in *Fortune* cautions IPO investors: "Don't be fooled by the drama of first-day performance." The article suggests that there is not always a strong correlation between the market's initial reaction to an IPO and the stock's longer-run performance. As a case in point, *Fortune* compares the post-IPO performance of Facebook and Twitter. As we mention in the text, Facebook's

stock slid sharply in the aftermath of its IPO. However, since then Facebook's stock has impressively rebounded. By contrast, Twitter's IPO generated a lot of initial buzz, but since then the stock has languished. The chart below illustrates Twitter's post-IPO struggles and highlights the major events the company faced after going public.



Source: Erin Griffith, "The Tale of Two IPOs: Facebook and Twitter," *Fortune* (www.fortune.com), February 19, 2015.

underperform the overall market.¹² Other critics point out that when an IPO's price dramatically jumps the first day of trading, this implies that the underwriter set the price too low and failed to maximize the issuer's potential proceeds by "leaving money on the table."¹³

Google's highly publicized IPO attracted attention because of its size (Google raised \$1.67 billion in stock) and because of the way the sale was conducted. Rather than having the offer price set by its investment bankers, Google conducted a *Dutch auction*, where individual investors placed bids for shares directly. In a *Dutch auction*, the actual transaction price is set at the highest price (the clearing price) that causes all of the offered shares to be sold. Investors who set their bids at or above the clearing price received all of the shares they subscribed to at the offer price, which turned out to be \$85. While Google's IPO was in many ways precedent setting, few companies going public since then have been willing or able to use the Dutch auction method to allocate their IPO shares.

It is important to recognize that firms can go public without raising any additional capital. For example, the Ford Motor Company was once owned exclusively by the Ford family. When Henry Ford died, he left a substantial part of his

¹²See Jay R. Ritter, "The Long-Run Performance of Initial Public Offerings," *Journal of Finance*, vol. 46, no. 1 (March 1991), pp. 3-27.

¹³See, for example, the online column by Professor Hersh Shefrin, "Why Twitter's IPO Was Really a Failure," *Forbes* (www.forbes.com), November 8, 2013.

stock to the Ford Foundation. When the Foundation later sold some of the stock to the general public, the Ford Motor Company went public, even though the company itself raised no capital in the transaction.

SelfTest



Differentiate between closely held and publicly owned corporations.

Differentiate between primary and secondary markets.

What is an IPO?

What is a Dutch auction, and what company used this procedure for its IPO?

2-6 Stock Markets and Returns

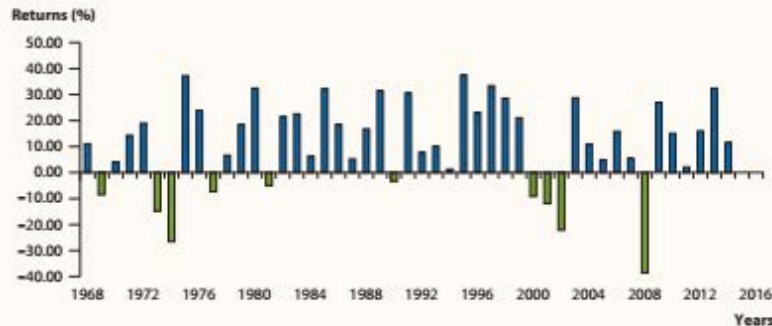
Anyone who has invested in the stock market knows that there can be (and generally are) large differences between *expected* and *realized* prices and returns. Figure 2.2 shows how total realized portfolio returns have varied from year to year. As logic would suggest (and as is demonstrated in Chapter 9), a stock's expected return as estimated by investors at the margin is always positive; otherwise, investors would not buy the stock. However, as Figure 2.2 shows, in some years, actual returns are negative.

2-6A STOCK MARKET REPORTING

Up until a few years ago, the best source of stock quotations was the business section of daily newspapers such as *The Wall Street Journal*. One problem with newspapers, however, is that they report yesterday's prices. Now it is possible to obtain quotes throughout the day from a wide variety of Internet sources. One of the best is Yahoo!'s finance.yahoo.com; Figure 2.3 shows a detailed quote for Twitter, Inc. (TWTR) for March 9, 2015. As the heading shows, Twitter is traded on the NYSE under the symbol TWTR. The information right below the company name and ticker symbol shows the real-time quote at 12:03 p.m. EDT of \$47.62, which is up \$0.87 (or 1.87%) from the previous day's close. Twitter stock closed on Friday, March 6, 2015, at \$46.75 per share and it opened for trading on Monday, March 9, 2015, at \$47.22 per share. As of noon March 9, 2015, Twitter's stock had

FIGURE 2.2

S&P 500 Index, Total Returns: Dividend Yield + Capital Gain or Loss, 1968–2014



Source: Data taken from various issues of *The Wall Street Journal* "Investment Scoreboard" section.

FIGURE 2.3 Stock Quote for Twitter, Inc., March 9, 2015


Source: Twitter, Inc. (TWTR), finance.yahoo.com.

traded from a low of \$47.13 to a high of \$48.08 and the price range during the past 52 weeks was between \$29.51 and \$55.99.

The next three lines give the bid (buy) and ask (sell) price range for the stock—the difference between the two represents the dealer's spread or profit. (In this example, a buyer had offered to purchase 200 shares at a bid price of \$47.83, and a seller was offering to sell 900 shares at an ask price of \$47.84.) The 1-year target estimate represents the median 1-year target price as forecasted by analysts covering the stock. As of noon March 9, 7,531,031 shares of stock had traded hands. Twitter's average daily trading volume (based on the past 3 months) was 20,498,600 shares, so just based on half a day, trading on this day looks to be below the average daily trading volume. The total value of all of Twitter's stock, called its market cap, was \$30.36 billion.

The last three lines report other market information for Twitter. The beta for the company is not shown. The firm's next earnings announcement is estimated between April 27th and May 1st. Twitter's P/E ratio (price per share divided by the most recent 12 months' earnings) is not shown, and its earnings per share for the most recent 12 months was $-\$0.96$. Twitter doesn't pay a dividend so the dividend and yield information is shown as N/A (not applicable).

In Figure 2.3, the chart to the right plots the stock price during the day; however, the links below the chart allow you to pick different time intervals for plotting data. As you can see, Yahoo! provides a great deal of information in its detailed quote; and even more detail is available on the screen page below the basic quote information.

2-6B STOCK MARKET RETURNS

In Chapters 8 and 9, we discuss in detail how a stock's rate of return is calculated, what the connection is between risk and returns, and what techniques analysts use to value stocks. However, it is useful at this point to give you an idea of how stocks have performed in recent years. Figure 2.2 shows how the returns on large U.S. stocks have varied over the past years, and the box titled "Measuring the Market" provides information on the major U.S. stock market indices and their performances since the mid-1990s.

The market trend has been strongly up since 1968, but by no means does it go up every year. Indeed, as we can see from Figure 2.2, the overall market was down

MEASURING THE MARKET

Stock market indexes are designed to show the performance of the stock market. However, there are many stock indexes, and it is difficult to determine which index best reflects market actions. Some are designed to represent the entire stock market, some track the returns of certain industry sectors, and others track the returns of small-cap, mid-cap, or large-cap stocks. In addition, there are indexes for different countries. We discuss here the three leading U.S. indexes. These indexes are used as a benchmark for comparing individual stocks with the overall market, for measuring the trend in stock prices over time, and for determining how various economic factors affect the market.

Dow Jones Industrial Average

Unveiled in 1896 by Charles H. Dow, the Dow Jones Industrial Average (DJIA) began with just 10 stocks, was expanded in 1916 to 20 stocks, and then was increased to 30 stocks in 1928, when the editors of *The Wall Street Journal* began adjusting the index for stock splits and making periodic substitutions. Recently, Apple replaced AT&T on the DJIA, recognizing the importance of computer technology and social media companies. Today the DJIA still includes 30 companies. They represent about a fifth of the market value of all U.S. stocks, and all are leading companies in their industries and widely held by individual and institutional investors. Visit djiaverages.com to get more information about the DJIA. You can find out how it is calculated, the companies that make up the DJIA, and more history about the DJIA. In addition, a DJIA time line shows various historical events.

S&P 500 Index

Created in 1926, the S&P 500 Index is widely regarded as the standard for measuring large-cap U.S. stock market performance. The stocks in the S&P 500 are selected by

the Standard & Poor's Index Committee, and they are the leading companies in the leading industries. It is weighted by each stock's market value, so the largest companies have the greatest influence. The S&P 500 is one of the most commonly used benchmarks for the U.S. stock market. Index funds designed to mirror the same performance of the index have grown in number and size over the last decade. The number of index funds has more than quadrupled in the last decade, and assets in stock index funds have grown over 85% during the past five years.

NASDAQ Composite Index

The NASDAQ Composite Index measures the performance of all stocks listed on the NASDAQ. Currently, it includes approximately 2,700 companies; and because many companies in the technology sector are traded on the computer-based NASDAQ exchange, this index is generally regarded as an economic indicator of the high-tech industry. Apple, Microsoft, Google, Facebook, and Intel are the five largest NASDAQ companies, and they make up a high percentage of the index's value-weighted market capitalization. For this reason, substantial movements in the same direction by these five companies can move the entire index.

Recent Performance

The accompanying figure plots the value that an investor would now have if he or she had invested \$1 in each of the three indexes on January 1, 1995, through January 1, 2015. The returns on the three indexes are compared with an investment strategy that invests only in 1-year Treasury bills (T-bills). During the last 20 years, the average annualized returns of these indexes ranged from 7.6% for the S&P 500 to 9.5% for the NASDAQ. (The Dow's annualized return during this same period was 7.8%.)

Growth of a \$1 Investment Made on January 1, 1995, through January 1, 2015



in 10 of the last 47 years, including the three consecutive years of 2000–2002. The stock prices of individual companies have likewise gone up and down.¹⁴ Of course, even in bad years, some individual companies do well; so “the name of the game” in security analysis is to pick the winners. Financial managers attempt to do this, but they don’t always succeed. In subsequent chapters, we will examine the decisions managers make to increase the odds that their firms will perform well in the marketplace.

SelfTest



Would you expect a portfolio that consisted of the NYSE stocks to be more or less risky than a portfolio of NASDAQ stocks?

If we constructed a chart like Figure 2.2 for a typical S&P 500 stock, do you think it would show more or less volatility? Explain.

2-7 Stock Market Efficiency

To begin this section, consider the following definitions:

- *Market price:* The current price of a stock. For example, the Internet showed that on one day, Twitter’s stock traded at \$47.62. The market price had varied from \$47.13 to \$48.08 during that same day as buy and sell orders came in.
- *Intrinsic value:* The price at which the stock would sell if all investors had all knowable information about a stock. This concept was discussed in Chapter 1, where we saw that a stock’s intrinsic value is based on its expected future cash flows and its risk. Moreover, the market price tends to fluctuate around the intrinsic value; and the intrinsic value changes over time as the company succeeds or fails with new projects, competitors enter or exit the market, and so forth. We can guess (or estimate) Twitter’s intrinsic value, but different analysts will reach somewhat different conclusions.
- *Equilibrium price:* The price that balances buy and sell orders at any given time. When a stock is in equilibrium, the price remains relatively stable until new information becomes available and causes the price to change.
- *Efficient market:* A market in which prices are close to intrinsic values and stocks seem to be in equilibrium.

When markets are efficient, investors can buy and sell stocks and be confident that they are getting good prices. When markets are inefficient, investors may be afraid to invest and may put their money “under the pillow,” which will lead to a poor allocation of capital and economic stagnation. From an economic standpoint, market efficiency is good.

¹⁴If we constructed a graph like Figure 2.2 for individual stocks rather than for the index, far greater variability would be shown. Also, if we constructed a graph like Figure 2.2 for bonds, it would have similar ups and downs, but the bars would be far smaller, indicating that gains and losses on bonds are generally much smaller than those on stocks. Above-average bond returns occur in years when interest rates decline, losses occur when interest rates rise sharply, but interest payments tend to stabilize bonds’ total returns. We discuss bonds in detail in Chapter 7.

Academics and financial professionals have studied the issue of market efficiency extensively.¹⁵ As generally happens, some people think that markets are highly efficient, some think that markets are highly inefficient, and others think that the issue is too complex for a simple answer. With this point in mind, it is interesting to note that the 2013 Nobel Prize in Economics was awarded to three distinguished scholars (Eugene Fama, Lars Hansen, and Robert Shiller) for their “empirical analysis of asset prices.” Professor Hansen was cited for his work in developing statistical models for testing the rationality of markets. Also, acknowledging the validity of different views in this area, the Nobel Committee saw fit to simultaneously recognize Professor Fama (a pioneer in developing efficient market theory) and Professor Shiller (a noted skeptic of market efficiency).

Those who believe that markets are efficient note that there are 100,000 or so full-time, highly trained professional analysts and traders operating in the market. Many have PhDs in physics, chemistry, and other technical fields in addition to advanced degrees in finance. Moreover, there are fewer than 3,000 major stocks; so if each analyst followed 30 stocks (which is about right, as analysts tend to focus on a specific industry), on average, 1,000 analysts would be following each stock. Further, these analysts work for organizations such as Goldman Sachs, JPMorgan Chase, and Deutsche Bank or for Warren Buffett and other billionaire investors who have billions of dollars available to take advantage of bargains. Also, the SEC has disclosure rules that, combined with electronic information networks, means that new information about a stock is received by all analysts at about the same time, causing almost instantaneous revaluations. All of these factors help markets to be efficient and cause stock prices to move toward their intrinsic values.

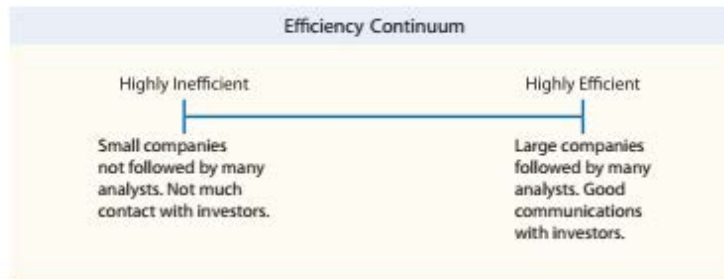
However, other people point to data that suggest that markets are not very efficient. For example, on May 6, 2010, the Dow Jones Index fell nearly 1,000 points only to rebound rapidly by the end of the day.¹⁶ In 2000, Internet stocks rose to phenomenally high prices, and then fell to zero or close to it the following year. No truly important news was announced that could have caused either of these changes; and if the market was efficient, it’s hard to see how such drastic changes could have occurred. Another situation that causes people to question market efficiency is the apparent ability of some analysts to consistently outperform the market over long periods. Warren Buffett comes to mind, but there are others. If markets are truly efficient, then each stock’s price should be close to its intrinsic value. That would make it hard for any analyst to consistently pick stocks that outperform the market.

The following diagram sums up where most observers seem to be today. There is an “efficiency continuum,” with the market for some companies’ stocks being highly efficient and the market for other stocks being highly inefficient. The key factor is the size of the company—the larger the firm, the more analysts tend to follow it and thus the faster new information is likely to be reflected in the stock’s price. Also, different companies communicate better

¹⁵The general name for these studies is the *efficient markets hypothesis*, or *EMH*. It was, and still is, a hypothesis that needs to be proved or disproved empirically. In the literature, researchers identified three levels of efficiency: *weak form*, which contends that information on past stock price movements cannot be used to predict future stock prices; *semi-strong form*, which contends that all publicly available information is immediately incorporated into stock prices (i.e., that one cannot analyze published reports and then beat the market); and *strong form*, which contends that even company insiders, with inside information, cannot earn abnormally high returns.

¹⁶Regulators are investigating the causes of this dramatic decline, and are particularly focusing on the role played by computerized trading. Refer to Tom Laucella, Scott Patterson, and Carolyn Cui, “Computer Trading Is Eyed,” *The Wall Street Journal* (online.wsj.com), May 8, 2010.

with analysts and investors; and the better the communications, the more efficient the market for the stock.



As an investor, would you prefer to purchase a stock whose price was determined in an efficient or an inefficient market? If you thought you knew something that others didn't know, you might prefer inefficient markets. But if you thought that those physics PhDs with unlimited buying power and access to company CEOs might know more than you, you would probably prefer efficient markets, where the price you paid was likely to be the "right" price. From an economic standpoint, it is good to have efficient markets in which everyone is willing to participate. So the SEC and other regulatory agencies should do everything they can to encourage market efficiency.

Thus far we have been discussing the market for individual stocks. But the notion of efficiency applies to the pricing of all assets. For example, the dramatic rise and subsequent collapse of housing prices in many U.S. markets suggests that there was a lot of inefficiency in these markets. It is also important to realize that the level of market efficiency also varies over time. In one respect, we might expect that lower transactions costs and the increasing number of analysts would cause markets to become increasingly efficient over time. However, the recent housing bubble and the previous bubble for Internet stocks provides some contrary evidence. Indeed, these recent events have caused many experts to look for alternative reasons for this apparent irrational behavior. A lot of their research looks for psychologically based explanations, which we discuss in the next section.

2-7A BEHAVIORAL FINANCE THEORY

The *efficient markets hypothesis (EMH)* remains one of the cornerstones of modern finance theory. It implies that, on average, asset prices are about equal to their intrinsic values. The logic behind the EMH is straightforward. If a stock's price is "too low," rational traders will quickly take advantage of this opportunity and buy the stock, pushing prices up to the proper level. Likewise, if prices are "too high," rational traders will sell the stock, pushing the price down to its equilibrium level. Proponents of the EMH argue that these forces keep prices from being systematically wrong.

Although the logic behind the EMH is compelling, many events in the real world seem inconsistent with the hypothesis, which has spurred a growing field called *behavioral finance*. Rather than assuming that investors are rational, behavioral finance theorists borrow insights from psychology to better understand how irrational behavior can be sustained over time. Pioneers in this field include psychologists Daniel Kahneman, Amos Tversky, and Richard Thaler.

Their work has encouraged a growing number of scholars to work in this promising area of research.¹⁷

Professor Thaler and his colleague Nicholas Barberis argue that behavioral finance's criticism of the EMH rests on two key points. First, it is often difficult or risky for traders to take advantage of mispriced assets. For example, even if you know that a stock's price is too low because investors have overreacted to recent bad news, a trader with limited capital may be reluctant to purchase the stock for fear that the same forces that pushed the price down may work to keep it artificially low for a long time. Similarly, during the recent stock market bubble, many traders who believed (correctly) that stock prices were too high lost a great deal of money selling stocks short in the early stages of the bubble, because prices went even higher before they eventually collapsed. Thus, mispricings may persist.

The second point deals with why mispricings can occur in the first place. Here insights from psychology come into play. For example, Kahneman and Tversky suggested that individuals view potential losses and gains differently. If you ask average individuals whether they would rather have \$500 with certainty or flip a fair coin and receive \$1,000 if a head comes up and nothing if a tail comes up, most would prefer the certain \$500, which suggests an aversion to risk. However, if you ask people whether they would rather pay \$500 with certainty or flip a coin and pay \$1,000 if it's a head and nothing if it's a tail, most would indicate that they prefer to flip the coin. Other studies suggest that people's willingness to take a gamble depends on recent performance. Gamblers who are ahead tend to take on more risk, whereas those who are behind tend to become more conservative.

These experiments suggest that investors and managers behave differently in down markets than they do in up markets, which might explain why those who made money early in the stock market bubble continued to invest their money in the market even as prices went ever higher. Other evidence suggests that individuals tend to overestimate their true abilities. For example, a large majority of people (upward of 90% in some studies) believe that they have above-average driving ability and above-average ability to get along with others. Barberis and Thaler point out that:

Overconfidence may in part stem from two other biases, self-attribution bias and hindsight bias. Self-attribution bias refers to people's tendency to ascribe any success they have in some activity to their own talents, while blaming failure on bad luck rather than on their ineptitude. Doing this repeatedly will lead people to the pleasing, but erroneous, conclusion that they are very talented. For example, investors might become overconfident after several quarters of investing success [Gervais and Odean (2001)]. Hindsight bias is the tendency of people to believe, after an event has occurred, that they predicted it before it happened. If people think they predicted the past better than they actually did, they may also believe that they can predict the future better than they actually can.¹⁸

¹⁷Five noteworthy sources for students interested in behavioral finance are George Akerlof and Robert Shiller, *Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism* (Princeton, NJ: Princeton University Press, 2009); Richard Thaler and Cass Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness* (New Haven, CT: Yale University Press, 2008); Richard H. Thaler, Editor, *Advances in Behavioral Finance* (New York: Russell Sage Foundation, 1993); Hersh Shefrin, "Behavioral Corporate Finance," *Journal of Applied Corporate Finance*, vol. 14, no. 3 (Fall 2001), pp. 113–125; and Nicholas Barberis and Richard Thaler, "A Survey of Behavioral Finance," Chapter 18 in *Handbook of the Economics of Finance*, edited by George Constantinides, Milt Harris, and René Stulz (New York: Elsevier/North-Holland, 2003). Students interested in learning more about the efficient markets hypothesis should consult Burton G. Malkiel, *A Random Walk Down Wall Street: The Time-Tested Strategy for Successful Investing*, 9th edition (New York: W.W. Norton & Company, 2007).

¹⁸Nicholas Barberis and Richard Thaler, "A Survey of Behavioral Finance," Chapter 18 in *Handbook of the Economics of Finance*, edited by George Constantinides, Milt Harris, and René Stulz (New York: Elsevier/North-Holland, 2003).

Behavioral finance has been studied in both the corporate finance and investments areas. For example, Mark Grinblatt and Matti Keloharju conducted a recent study demonstrating that investors who are characterized as being overconfident and prone to “seeking sensations” trade more frequently.¹⁹ Likewise, a study by Ulrike Malmendier of Stanford and Geoffrey Tate of Wharton found that overconfidence leads managers to overestimate their ability and thus the profitability of their projects.²⁰ This may explain why so many corporate projects fail to live up to their stated expectations.

2-7B CONCLUSIONS ABOUT MARKET EFFICIENCY

As noted previously, if the stock market is efficient, it is a waste of time for most people to seek bargains by analyzing published data on stocks. That follows because if stock prices already reflect all publicly available information, they will be fairly priced; and a person can beat the market only with luck or inside information. So rather than spending time and money trying to find undervalued stocks, it would be better to buy an index fund designed to match the overall market as reflected in an index such as the S&P 500. However, if we worked for an institution with billions of dollars, we would try to find undervalued stocks or companies because even a small undervaluation would amount to a great deal of money when investing millions rather than thousands. Also, markets are more efficient for individual stocks than for entire companies; so for investors with enough capital, it does make sense to seek out badly managed companies that can be acquired and improved. Note, though, that a number of private equity players are doing exactly that; so the market for entire companies may soon be as efficient as that for individual stocks.

However, even if markets are efficient and all stocks and companies are fairly priced, an investor should still be careful when selecting stocks for his or her portfolio. Most importantly, the portfolio should be diversified, with a mix of stocks from various industries along with some bonds and other fixed-income securities. We will discuss diversification in greater detail in Chapter 8, but it is an important consideration for most individual investors.

SelfTest



What does it mean for a market to be “efficient”?

Is the market for all stocks equally efficient? Explain.

Why is it good for the economy that markets be efficient?

Is it possible that the market for individual stocks could be highly efficient, but the market for whole companies could be less efficient? Explain.

What is behavioral finance? What are the implications of behavioral finance for market efficiency?

¹⁹Mark Grinblatt and Matti Keloharju: “Sensation Seeking, Overconfidence, and Trading Activity,” *The Journal of Finance*, vol. LXIV, no. 2 (April 2009), pp. 549–578.

²⁰Ulrike Malmendier and Geoffrey Tate, “CEO Overconfidence and Corporate Investment,” Stanford Graduate School of Business Research Paper #1799, June 2004.



TYING IT ALL TOGETHER

In this chapter, we provided a brief overview of how capital is allocated and discussed the financial markets, instruments, and institutions used in the allocation process. We discussed physical location exchanges and electronic markets for common stocks, stock market reporting, and stock indexes. We demonstrated that security prices are volatile—investors expect to make money, which they generally do over time; but losses can be large in any given year. Finally, we discussed the efficiency of the stock market and developments in behavioral finance. After reading this chapter, you should have a general understanding of the financial environment in which businesses and individuals operate, realize that actual returns are often different from expected returns, and be able to read stock market quotations from business newspapers or various Internet sites. You should also recognize that the theory of financial markets is a “work in progress,” and much work remains to be done.

Self-Test Questions and Problems



(Solutions Appear in Appendix A)

ST-1 KEY TERMS Define each of the following terms:

- a. Spot markets; futures markets
- b. Money markets; capital markets
- c. Primary markets; secondary markets
- d. Private markets; public markets
- e. Derivatives
- f. Investment banks (iBanks); commercial banks; financial services corporations
- g. Mutual funds; money market funds
- h. Physical location exchanges; over-the-counter (OTC) market; dealer market
- i. Closely held corporation; publicly owned corporation
- j. Going public; initial public offering (IPO) market
- k. Efficient markets hypothesis (EMH)
- l. Behavioral finance

Questions

- 2-1 How does a cost-efficient capital market help reduce the prices of goods and services?
- 2-2 Describe the different ways in which capital can be transferred from suppliers of capital to those who are demanding capital.
- 2-3 Is an initial public offering an example of a primary or a secondary market transaction? Explain.

- 2-4 Indicate whether the following instruments are examples of money market or capital market securities.
- U.S. Treasury bills
 - Long-term corporate bonds
 - Common stocks
 - Preferred stocks
 - Dealer commercial paper
- 2-5 What would happen to the U.S. standard of living if people lost faith in the safety of the financial institutions? Explain.
- 2-6 What types of changes have financial markets experienced during the last two decades? Have they been perceived as positive or negative changes? Explain.
- 2-7 Differentiate between dealer markets and stock markets that have a physical location.
- 2-8 Identify and briefly compare the two leading stock exchanges in the United States today.
- 2-9 Briefly explain what is meant by the term *efficiency continuum*.
- 2-10 Explain whether the following statements are true or false.
- Derivative transactions are designed to increase risk and are used almost exclusively by speculators who are looking to capture high returns.
 - Hedge funds typically have large minimum investments and are marketed to institutions and individuals with high net worths.
 - Hedge funds have traditionally been highly regulated.
 - The New York Stock Exchange is an example of a stock exchange that has a physical location.
 - A larger bid-ask spread means that the dealer will realize a lower profit.



INTEGRATED CASE

SMYTH BARRY & COMPANY

- 2-1 FINANCIAL MARKETS AND INSTITUTIONS** Assume that you recently graduated with a degree in finance and have just reported to work as an investment adviser at the brokerage firm of Smyth Barry & Co. Your first assignment is to explain the nature of the U.S. financial markets to Michelle Varga, a professional tennis player who recently came to the United States from Mexico. Varga is a highly ranked tennis player who expects to invest substantial amounts of money through Smyth Barry. She is very bright; therefore, she would like to understand in general terms what will happen to her money. Your boss has developed the following questions that you must use to explain the U.S. financial system to Varga.
- What are the three primary ways in which capital is transferred between savers and borrowers? Describe each one.
 - What is a market? Differentiate between the following types of markets: physical asset markets versus financial asset markets, spot markets versus futures markets, money markets versus capital markets, primary markets versus secondary markets, and public markets versus private markets.
 - Why are financial markets essential for a healthy economy and economic growth?
 - What are derivatives? How can derivatives be used to reduce risk? Can derivatives be used to increase risk? Explain.

- e. Briefly describe each of the following financial institutions: investment banks, commercial banks, financial services corporations, pension funds, mutual funds, exchange traded funds, hedge funds, and private equity companies.
- f. What are the two leading stock markets? Describe the two basic types of stock markets.
- g. If Apple Computer decided to issue additional common stock, and Varga purchased 100 shares of this stock from Smyth Barry, the underwriter, would this transaction be a primary or a secondary market transaction? Would it make a difference if Varga purchased previously outstanding Apple stock in the dealer market? Explain.
- h. What is an initial public offering (IPO)?
- i. What does it mean for a market to be efficient? Explain why some stock prices may be more efficient than others.
- j. After your consultation with Michelle, she wants to discuss these two possible stock purchases:
 - 1. While in the waiting room of your office, she overheard an analyst on a financial TV network say that a particular medical research company just received FDA approval for one of its products. On the basis of this “hot” information, Michelle wants to buy many shares of that company’s stock. Assuming the stock market is highly efficient, what advice would you give her?
 - 2. She has read a number of newspaper articles about a huge IPO being carried out by a leading technology company. She wants to purchase as many shares in the IPO as possible and would even be willing to buy the shares in the open market immediately after the issue. What advice do you have for her?
- k. How does behavioral finance explain the real-world inconsistencies of the efficient markets hypothesis (EMH)?