



CHAPTER

5

## FINANCIAL MARKETS AND INSTITUTIONS

### **A Strong Financial System Is Necessary for a Growing and Prosperous Economy**

Financial 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 outcomes of various decisions. Thus, it is crucial that investors and financial managers have a good understanding of the environment in which they operate.

History shows that a strong financial system is a necessary ingredient for a growing and prosperous economy. Companies raising capital to finance capital expenditures as well as 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 Nebraska can deposit funds in a European bank or purchase a mutual fund that invests in Chinese securities.

It is important to recognize that at the most fundamental level well-functioning markets and institutions are based heavily on trust. An investor who deposits money in a bank, buys stock through an online brokerage account, or contacts her broker to buy a mutual fund places her money and trust in the hands of the financial institutions that provide her with advice and transaction services. Similarly, when businesses approach commercial or investment banks to raise capital, they are relying on these institutions to provide them with funds under the best possible terms, and with sound, objective advice.

While changing technology and globalization have made it possible for more and more types of financial transactions to take place, a series of scandals in recent years have rocked the financial industry and have led many to

question whether some of our institutions are serving their own or their clients' interests.

Many of these questionable practices have come to light because of the efforts of a single man: the Attorney General of New York, Eliot Spitzer. In 2001, Spitzer exposed conflicts of interest within investment banking firms regarding dealings between their underwriters, who help companies issue new securities, and their analysts, who make recommendations to individual investors to purchase these securities. Allegations were made that to attract the business of firms planning to issue new securities, investment banks leaned on their analysts to write glowing, overly optimistic research reports on these firms. While such practices helped produce large underwriting fees for the investment banks, they compromised their ability to provide the objective, independent research on which their clients depended. A few years later, Spitzer turned his attention to the mutual fund industry, where he exposed unethical fee structures and trading practices of some of the leading funds. More recently, Spitzer has questioned whether some insurance brokers have compromised their clients' interests in order to steer business toward insurers, who provide the broker with rebates of different types.<sup>1</sup>

While some have criticized Spitzer for being overly zealous and politically ambitious, his efforts have appropriately brought to light many questionable practices. Hopefully, this spotlight will put pressure on the institutions to establish practices that will restore the public's trust and lead to a better financial system in the long run.

## Putting Things In Perspective

In earlier chapters, we discussed financial statements and showed how financial managers and others analyze them to evaluate a firm's operations and financial position—past, current, and future. To make good decisions, financial managers must understand the environment and markets within which businesses operate. Therefore, in this chapter we describe the markets where capital is raised, securities are traded, and stock prices are established, as well as the institutions that operate in these markets. Because the overall objective of financial managers is to maximize shareholder value, we also take a closer look at how the stock market operates, and we discuss the concept of market efficiency.

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<sup>1</sup> For example, some insurance companies allowed brokers to keep premiums for as much as a year before remitting them to the insurance companies. The brokers invested these premiums and earned interest on them, and this gave them an incentive to steer business to these companies rather than to insurance companies whose policies might be better for the brokers' clients.

## 5.1 AN OVERVIEW OF THE CAPITAL ALLOCATION PROCESS

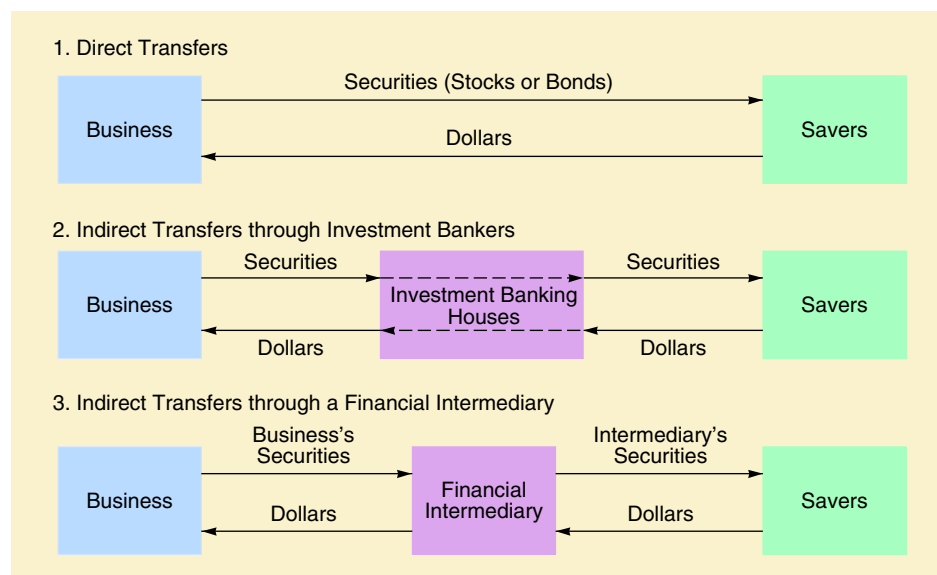
Businesses, individuals, and governments often need to raise capital. For example, suppose Carolina Power & Light (CP&L) forecasts an increase in the demand for electricity in North Carolina, and the company decides to build a new power plant. Because CP&L almost certainly will not have the \$1 billion or so necessary to pay for the plant, the company will have to raise this capital in the financial markets. Or suppose Mr. Fong, the proprietor of a San Francisco hardware store, decides to expand into appliances. Where will he get the money to buy the initial inventory of TV sets, washers, and freezers? Similarly, if the Johnson family wants to buy a home that costs \$200,000, but they have only \$40,000 in savings, how can they raise the additional \$160,000? And if the city of New York wants to borrow \$200 million to finance a new sewer plant, or the federal government needs money to meet its needs, they too need access to the capital markets.

On the other hand, some individuals and firms have incomes that are greater than their current expenditures, so they have funds available to invest. For example, Carol Hawk has an income of \$36,000, but her expenses are only \$30,000, and as of December 31, 2004, Ford Motor Company had accumulated roughly \$23.5 billion of cash and equivalents, which it has available for future investments.

People and organizations with surplus funds are saving today in order to accumulate funds for future use. A household might save to pay for future expenses such as their children's education or their retirement, while a business might save to fund future investments. Those with surplus funds expect to earn a positive return on their investments. People and organizations who need money today borrow to fund their current expenditures. They understand that there is a cost to this capital, and this cost is essentially the return that the investors with surplus funds expect to earn on those funds.

In a well-functioning economy, capital will flow efficiently from those who supply capital to those who demand it. This transfer of capital can take place in the three different ways described in Figure 5-1:

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.
2. As shown in the middle section, transfers may also go through an *investment banking house* such as Merrill Lynch, which *underwrites* the issue. An underwriter serves as a middleman and facilitates the issuance of securities. The company sells its stocks or bonds to the investment bank, which in turn sells these same securities to savers. The businesses' securities and the savers' money merely "pass through" the investment banking house. However, the investment bank does buy and hold the securities for a period of time, so it is taking a risk—it may not be able to resell them to savers for as much as it paid. Because new securities are involved and the corporation receives the proceeds of the sale, this is called a *primary market transaction*.
3. Transfers can also be made through a *financial intermediary* such as a bank or mutual fund. Here the intermediary obtains funds from savers in exchange for its own securities. The intermediary uses this money to buy and hold businesses' securities. For example, a saver might deposit dollars in a bank, receiving from it a certificate of deposit, and then the bank might lend the money to a small business as a mortgage loan. Thus, intermediaries literally create new forms of capital—in this case, certificates of deposit, which are both safer and more liquid than mortgages and thus are better for most

**FIGURE 5-1** *Diagram of the Capital Formation Process*

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, a government unit, and so on. For example, if your uncle lends you money to help fund a new business after you graduate, this would be a direct transfer of funds. Alternatively, if your family borrows money to purchase a home, you will probably raise the funds through a financial intermediary such as your local commercial bank or mortgage banker, which in turn may acquire its funds from a national institution, such as Fannie Mae.

In a global context, economic development is highly correlated with the level and efficiency of financial markets and institutions.<sup>2</sup> 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. For this reason, policy makers often promote the globalization of financial markets.

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.



Identify three different ways capital is transferred between savers and borrowers.

Why do policy makers promote the globalization of financial markets?

<sup>2</sup> For a detailed review of the evidence linking financial development to economic growth, see Ross Levine, "Finance and Growth: Theory and Evidence," NBER Working Paper no. w10766, September 2004.

## 5.2 FINANCIAL MARKETS

People and organizations wanting to borrow money are brought together with those having surplus funds in the *financial markets*. Note that “markets” is plural; there are a great many different financial markets in a developed economy such as ours. We briefly describe the different types of financial markets and some recent trends in these markets.

### 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 often useful to classify markets along the following dimensions:

1. *Physical asset versus financial asset markets.* *Physical asset markets* (also called “tangible” or “real” asset markets) are those for products such as wheat, autos, real estate, computers, and machinery. *Financial asset markets*, on the other hand, deal with stocks, bonds, notes, mortgages, and other *claims on real assets*, as well as 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 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 six months from now at a price of \$5 a bushel. On the other side, an international food producer looking to buy soybeans in the future may enter into a futures contract in which it agrees to buy soybeans six months from now.
3. *Money 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 on this, but when describing 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 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, this would be a primary market transaction. The corporation selling the newly created stock 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, various 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 any 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.



### 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.

5. *Private 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 that appeals to the two parties. By contrast, securities that are issued in public markets (for example, common stock and corporate bonds) are ultimately held by a large number of individuals. Public securities must have fairly standardized contractual features, both to appeal to a broad range of investors and also because public investors do not generally have the time and expertise to study unique, nonstandardized contracts. Their wide ownership also ensures that public securities are relatively liquid. Private market securities are, therefore, more tailor-made but less liquid, whereas publicly traded securities are more liquid but subject to greater standardization.

Other classifications could be made, but this breakdown is sufficient to show 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, hence, whether we have a “money” or “capital” market transaction. You should be aware of the important differences among types of markets, but don’t get hung up 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 simply could not function: Carolina Power & Light 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 on. Obviously, the level of employment and productivity, hence our standard of living, would be much lower. Therefore, it is absolutely essential that our financial markets function efficiently—not only quickly, but also at a low cost.<sup>3</sup>

Table 5-1 (on pages 148–149) gives a listing of the most important instruments traded in the various financial markets. The instruments are arranged from top to bottom in ascending order of typical length of maturity. As we go through the book, we will look in more detail at many of the instruments listed in Table 5-1. For example, we will see that there are many varieties of corporate bonds, ranging from “plain vanilla” bonds to bonds that are convertible into common stocks to bonds whose interest payments vary depending on the inflation rate. Still, the table gives an idea of the characteristics and costs of the instruments traded in the major financial markets.

## Recent Trends

Financial markets have experienced many changes during the last two decades. Technological advances in computers and telecommunications, along with the globalization of banking and commerce, have led to deregulation, and this has increased competition throughout the world. The result is a much more effi-

<sup>3</sup> As the countries of the former Soviet Union and other Eastern European nations move toward capitalism, just as much attention must be paid to the establishment of cost-efficient financial markets as to electrical power, transportation, communications, and other infrastructure systems. Economic efficiency is simply impossible without a good system for allocating capital within the economy.

cient, internationally linked market, but one that is far more complex than existed a few years ago. While these developments have been largely positive, they have also created problems for policy makers. At one conference, Federal Reserve Board Chairman Alan Greenspan stated that modern financial markets “expose national economies to shocks from new and unexpected sources and with little if any lag.” He went on to say that central banks must develop new ways to evaluate and limit risks to the financial system. Large amounts of capital move quickly around the world in response to changes in interest and exchange rates, and these movements can disrupt local institutions and economies.

Globalization has exposed the need for greater cooperation among regulators at the international level. Various committees are currently working to improve coordination, but the task is not easy. Factors that complicate coordination include (1) the differing structures among nations’ banking and securities industries, (2) the trend in Europe toward financial services conglomerates, and (3) reluctance on the part 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 corporations with new opportunities but also exposing them to new risks.

Derivatives can be used either to reduce risks or to speculate. Suppose an importer’s costs rise and its net income falls when the dollar falls relative to the yen. That company could reduce its risk by purchasing derivatives whose values increase when the dollar declines. 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, and Orange County (California) went bankrupt as a result of its treasurer’s speculation in derivatives.

The size and complexity of derivatives transactions concern regulators, academics, and members of Congress. Fed Chairman Greenspan noted that, in theory, derivatives should allow companies to manage risk better, but that it is not clear whether recent innovations have “increased or decreased the inherent stability of the financial system.”

### Derivative

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



Distinguish between physical asset and financial asset markets.

What’s the difference between spot and futures markets?

Distinguish between money and capital markets.

What’s the difference between primary and secondary markets?

Differentiate between private and public markets.

Why are financial markets essential for a healthy economy and economic growth?

What is a derivative, and how is its value related to that of an “underlying asset”?

TABLE 5-1

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

Instrument (1)	Market (2)	Major Participants (3)	SECURITY CHARACTERISTICS		
			Riskiness (4)	Original Maturity (5)	Interest Rate on 2/1/05 <sup>a</sup> (6)
U.S. Treasury bills	Money	Sold by U.S. Treasury to finance federal expenditures	Default-free	91 days to 1 year	2.48%
Bankers' acceptances	Money	A firm's promise to pay, guaranteed by a bank	Low degree of risk if guaranteed by a strong bank	Up to 180 days	2.68
Dealer commercial paper	Money	Issued by financially secure firms to large investors	Low default risk	Up to 270 days	2.67
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	2.70
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)	1.69
Eurodollar market time deposits	Money	Issued by banks outside U.S.	Default risk depends on the strength of the issuing bank	Up to 1 year	2.70
Consumer credit, including credit card debt	Money	Issued by banks/credit unions/finance companies to individuals	Risk is variable	Variable	Variable, but goes up to 20% or more
U.S. Treasury notes and bonds	Capital	Issued by U.S. government	No default risk, but price will decline if interest rates rise	2 to 30 years	4.65

<sup>a</sup> The yields reported (except for corporate and municipal bonds) are from *The Wall Street Journal*. Money market rates assume a 3-month maturity. Corporate and municipal bond rates are for 30-year AAA-rated bonds; quotes are from *Federal Reserve Statistical Release*.

## 5.3 FINANCIAL INSTITUTIONS

Direct funds transfers are more common among individuals and small businesses, and in economies where financial markets and institutions are less developed. While businesses in more developed economies do occasionally rely on direct transfers, they generally find it more efficient to enlist the services of one or more financial institutions when it comes time to raise capital.

In the United States and other developed nations, a set of highly efficient financial intermediaries has evolved. Their original roles were generally quite specific, but many of them have diversified to the point where they serve



TABLE 5-1 (Continued)

Instrument (1)	Market (2)	Major Participants (3)	SECURITY CHARACTERISTICS		
			Riskiness (4)	Original Maturity (5)	Interest Rate on 2/1/05 <sup>a</sup> (6)
Mortgages	Capital	Borrowings from commercial banks and S&Ls by individuals and businesses	Risk is variable	Up to 30 years	5.20
State and local government bonds	Capital	Issued by state and local governments to individuals and institutional investors	Riskier than U.S. government securities, but exempt from most taxes	Up to 30 years	4.40
Corporate bonds	Capital	Issued by corporations to individuals and institutional investors	Riskier than U.S. government securities, but less risky than preferred and common stocks; varying degree of risk within bonds depending on strength of issuer	Up to 40 years <sup>b</sup>	5.22
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	Riskier than corporate bonds, but less risky than common stock	Unlimited	6 to 8%
Common stocks <sup>c</sup>	Capital	Issued by corporations to individuals and institutional investors	Risky	Unlimited	NA

<sup>b</sup> Just recently, a few corporations have issued 100-year bonds; however, the majority have issued bonds with maturities less than 40 years.

<sup>c</sup> While common stocks do not pay interest, they are expected to provide a "return" in the form of dividends and capital gains. As you will see in Chapter 8, historical stock returns have averaged between 10 and 15 percent a year. Of course, if you buy a stock, your actual return may be considerably higher or lower than these historical averages.

many different markets. As a result, the differences between institutions have tended to become blurred. Still, there remains a degree of institutional identity, and therefore it is useful to describe the major categories of financial institutions here:

1. **Investment banking houses** such as Merrill Lynch, Morgan Stanley, Goldman Sachs, or Credit Suisse Group provide a number of services to both investors and companies planning to raise capital. Such organizations (a) help

### Investment Banking House

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

corporations design securities with features that are currently attractive to investors, (b) then buy these securities from the corporation, and (c) resell them to savers. Although the securities are sold twice, this process is really one primary market transaction, with the investment banker acting as a facilitator to help transfer capital from savers to businesses.

### Commercial Bank

*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.*

2. **Commercial banks**, such as Bank of America, Wells Fargo, Wachovia, and J. P. 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. Conversely, commercial banks are providing an ever-widening range of services, including stock brokerage services and insurance.
3. **Financial services corporations** are large conglomerates that combine many different financial institutions within a single corporation. Examples of financial services corporations, most of which started in one area but have now diversified to cover most of the financial spectrum, include Citigroup, American Express, Fidelity, and Prudential.
4. *Savings and loan associations (S&Ls)* traditionally served individual savers and residential and commercial mortgage borrowers, taking the funds of many small savers and then lending this money to home buyers and other types of borrowers. In the 1980s, the S&L industry experienced severe problems when (a) short-term interest rates paid on savings accounts rose well above the returns earned on the existing mortgages held by S&Ls and (b) commercial real estate suffered a severe slump, resulting in high mortgage default rates. Together, these events forced many S&Ls to merge with stronger institutions or close their doors.
5. *Mutual savings banks*, which are similar to S&Ls, operate primarily in the northeastern states, accepting savings primarily from individuals, and lending mainly on a long-term basis to home buyers and consumers.
6. *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.
7. *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.
8. *Life insurance companies* take savings in the form of annual premiums; invest these funds in stocks, bonds, real estate, and mortgages; and finally 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 the participants when they retire.
9. **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 desire safety, stock funds for savers who are willing to accept significant risks in the hope of higher returns, and still other funds that are used as interest-bearing

### Mutual Funds

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

checking accounts (**money market funds**). There are literally thousands of different mutual funds with dozens of different goals and purposes.

Mutual funds have grown more rapidly than most other institutions in recent years, in large part because of a change in the way corporations provide for employees' retirement. Before the 1980s, most corporations said, in effect, "Come work for us, and when you retire, we will give you a retirement income based on the salary you were earning during the last five years before you retired." The company was then responsible for setting aside funds each year to make sure it had the money available to pay the agreed-upon retirement benefits. That situation is changing rapidly. Today, new employees are likely to be told, "Come work for us, and we will give you some money each payday that you can invest for your future retirement. You can't get the money until you retire (without paying a huge tax penalty), but if you invest wisely, you can retire in comfort." Most workers recognize that they don't know enough to invest wisely, so they turn their retirement funds over to a mutual fund. Hence, mutual funds are growing rapidly. 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.

10. *Hedge funds* are 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 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) that are effectively marketed to institutions and individuals with high net worths. Different hedge fund managers follow different strategies. For example, a hedge fund manager who believes that the spreads between corporate and Treasury bond yields are too large might simultaneously buy a portfolio of corporate bonds and sell a portfolio of Treasury bonds. In this case, the portfolio is "hedged" against overall movements in interest rates, but it will do well if the spread between these securities narrows. Likewise, hedge fund managers may take advantage of perceived incorrect valuations in the stock market, that is, where a stock's market and intrinsic values differ.

Hedge funds generally charge large fees, often a fixed amount plus 15 to 20 percent of the fund's capital gains. The average hedge fund has done quite well in recent years. In a recent report, Citigroup estimates that the average hedge fund has produced an annual return of 11.9 percent since 1990. Over the same time period, the average annual returns of the overall stock market were 10.5 percent, and the returns on mutual funds were even lower, 9.2 percent. Given the stock market's relatively lackluster performance in recent years, an increasing number of investors have flocked to hedge funds. Between 1999 and 2004, the money managed by them more than quadrupled to roughly \$800 billion. However, the same article in *BusinessWeek* that highlighted the strong growth and relative performance of these funds also suggested that their returns are showing signs of weakness and emphasized that they are certainly not without risk.<sup>4</sup>

Indeed, some hedge funds take on risks that are considerably higher than that of an average individual stock or mutual fund. Moreover, in recent years, some have also produced spectacular losses. For example, many

### Money Market Funds

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

<sup>4</sup> See Anne Tergesen, "Time to Hedge on Hedge Funds? New Research Shows that Returns Are Sliding, and Some Don't Help You Diversify," *BusinessWeek*, September 13, 2004, p. 104.

hedge fund investors suffered large losses in 1998 when the Russian economy collapsed. That same year, the Federal Reserve had to step in to help rescue Long Term Capital Management, 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.<sup>5</sup>

As hedge funds have become more popular, many 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.

With the notable exception of hedge funds, financial institutions have been heavily regulated to ensure the safety of these institutions and thus 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 buy, 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 our capital markets. Recognizing this fact, policy makers took several steps during the 1980s and 1990s to deregulate financial services companies. For example, the barriers that restricted banks from expanding nationwide were eliminated. Likewise, regulations that once forced a strict separation of commercial and investment banking have been relaxed.

The result of the ongoing regulatory changes has been a blurring of the distinctions between the different types of institutions. Indeed, the trend in the United States today is toward huge financial services corporations, which own banks, S&Ls, investment banking houses, insurance companies, pension plan operations, and mutual funds, and which have branches across the country and around the world. For example, Citigroup combines one of the world's largest commercial banks (Citibank), a huge insurance company (Travelers), and a major investment bank (Smith Barney), along with numerous other subsidiaries that operate throughout the world. Citigroup's structure is similar to that of major institutions in Europe, Japan, and elsewhere around the globe.

Panel A of Table 5-2 lists the 10 largest U.S. bank and thrift holding companies, while Panel B shows the leading world banking companies. Among the world's 10 largest, only one (Citigroup) 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 underwriters in terms of dollar volume of new debt and equity issues. Six of the top underwriters are also major commercial banks or are part of bank holding companies, which confirms the continued blurring of distinctions among different types of financial institutions.



What is the difference between a pure commercial bank and a pure investment bank?

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

What are some important differences between mutual and hedge funds? How are they similar?

<sup>5</sup> See 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 Long Term Capital Management's collapse.

TABLE 5-2

*10 Largest U.S. Bank and Thrift Holding Companies and World Banking Companies and Top 10 Leading Underwriters*

Panel A U.S. Bank and Thrift Holding Companies <sup>a</sup>	Panel B World Banking Companies <sup>b</sup>	Panel C Leading Global Underwriters <sup>c</sup>
Citigroup Inc.	Mizuho Financial Group (Tokyo)	Citigroup Inc.
Bank of America Corp.	Citigroup Inc. (New York)	Morgan Stanley
J. P. Morgan Chase & Co.	Allianz AG (Munich)	J. P. Morgan
Wells Fargo & Co.	UBS AG (Zurich)	Merrill Lynch
Wachovia Corp.	HSBC Holdings PLC (London)	Lehman Brothers
MetLife Inc.	Deutsche Bank AG (Frankfurt)	Credit Suisse First Boston
Bank One	Credit Agricole (Paris)	Deutsche Bank AG
Washington Mutual Inc.	BNP Paribas (Paris)	UBS AG
U.S. Bancorp	ING Group NV (Amsterdam)	Goldman Sachs
SunTrust Banks Inc.	Sumitomo Mitsui Financial Group (Tokyo)	Banc of America Securities

## Notes:

<sup>a</sup> Ranked by total assets as of June 30, 2004. Source: "Top 150 Bank and Thrift Holding Companies with the Most Assets," *AmericanBanker.com*, October 19, 2004.

<sup>b</sup> Ranked by total assets as of December 31, 2003. Source: "World's Largest Banking Companies by Assets," *AmericanBanker.com*, November 12, 2004.

<sup>c</sup> Ranked by dollar amount raised through new issues (stocks and bonds) in 2004. For this ranking, the lead underwriter (manager) is given credit for the entire issue. Source: Adapted from *The Wall Street Journal*, January 3, 2005, p. R17.

## 5.4 THE STOCK MARKET

As noted earlier, secondary markets are those in which outstanding, previously issued securities are traded. 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.

While the two leading stock markets today are the New York Stock Exchange and the Nasdaq stock market, stocks are actually traded using a variety of market procedures. However, there are just two basic types of stock markets: (1) *physical location exchanges*, which include the New York Stock Exchange (NYSE), the American Stock Exchange (AMEX), and several regional stock exchanges, and (2) *electronic dealer-based markets* that include the Nasdaq stock market, the less formal over-the-counter market, and the recently developed electronic communications networks (ECNs). (See the box entitled, "The NYSE and Nasdaq Combine Forces with the Leading Online Trading Systems.") Because the physical location exchanges are easier to describe and understand, we consider them first.

## Citigroup Built to Compete in a Changing Environment

The financial environment has been undergoing tremendous changes, including breakthroughs in technology, increased globalization, and shifts in the regulatory environment. All of these factors have presented financial managers and investors with opportunities, but those opportunities are accompanied by substantial risks.

Consider the case of Citigroup Inc., which was created in 1998 when Citicorp and Travelers Group (which included the investment firm Salomon Smith Barney) merged. Citigroup today operates in more than 100 countries, has roughly 200 million customers and 275,000 employees, and holds more than \$1.4 trillion (that's over a thousand billion!) worth of assets.

Citigroup resulted from three important trends:

1. A regulatory change made it possible for U.S. corporations to engage in commercial banking, investment banking, and insurance.
2. Increased globalization made it desirable for financial institutions to follow their clients and operate in many countries.
3. Changing technology led to increased economies of scale and scope, both of which increase the relative efficiency of huge, diversified companies such as Citigroup.

The same forces that are transforming the financial services industry have affected other industries. In particular, the growth of the Internet has provided many companies with increased opportunities, but it has also created additional competition and risk. For example, it has altered the way millions of consumers purchase airline tickets, hotel rooms, books, and automobiles. Consequently, financial managers must understand today's technological environment and be ready to change operations as the environment evolves.

### Physical Location Exchanges

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

## The Physical Location Stock Exchanges

The **physical location exchanges** are tangible physical entities. Each of the larger ones occupies its own building, has a limited number of members, and has an elected governing body—its board of governors. Members are said to have "seats" on the exchange, although everybody stands up. These seats, which are bought and sold, give the holder the right to trade on the exchange. There are currently 1,366 seats on the New York Stock Exchange (this number has remained constant since 1953). In early 2005, a seat on the NYSE sold for \$1.0 million, which was considerably lower than the record high of \$2.65 million. Seat prices are at multiyear lows due to low trading volume, declines in commissions earned, and recent scandals that have rocked the NYSE.

Most of the larger investment banking houses operate *brokerage departments*, and they own 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, Merrill Lynch (the fourth largest brokerage firm) might receive an order in its Atlanta office from a customer who wants to buy shares of GE stock. Simultaneously, the Denver office of Morgan Stanley (the second largest brokerage firm) might receive an order from a customer wishing to sell shares of GE. Each broker communicates electronically with the firm's representative on the NYSE. Other brokers throughout the country are



## The NYSE and Nasdaq Combine Forces with the Leading Online Trading Systems

The forces 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. As of early 2005, the majority of these transactions were conducted by two firms: Instinet Group and Archipelago.

The rise of ECNs has accelerated the move toward 24-hour trading. Large clients who want to trade after other markets have closed may utilize an ECN, thus bypassing the NYSE and Nasdaq. The move toward faster, cheaper, and continuous trading obviously benefits investors, but it does present regulators, who try to ensure that all investors have access to a "level playing field," with a number of headaches.

Recognizing the new threat, the two leading exchanges have not been content to stand idly by. In April 2005, the NYSE announced plans to acquire Archipelago and to turn itself into a public company. If the deal goes through, the new company will be called NYSE Group Inc., and 70 percent of the combined company will be owned by those who currently hold seats on the NYSE. Archipelago

shareholders will own the remaining 30 percent. Two days after this stunning announcement, Nasdaq announced its own plans to purchase Instinet.

These announced mergers confirm the growing importance of electronic trading and have led many to conclude that the floor traders who buy and sell stock on the NYSE may soon become a thing of the past as an increasing number of transactions take place electronically. Others contend that there will remain a role for these floor traders for at least the foreseeable future. In any event, what is clear is that the financial landscape of stock trading will continue to undergo dramatic changes in the upcoming years.

Sources: Katrina Brooker, "Online Investing: It's Not Just for Geeks Anymore," *Fortune*, December 21, 1998, pp. 89–98; "Fidelity, Schwab Part of Deal to Create Nasdaq Challenger," *The Milwaukee Journal Sentinel*, July 22, 1999, p. 1; Aaron Lucchetti, Susanne Craig, and Dennis K. Berman, "NYSE to Acquire Electronic Trader and Go Public," *The Wall Street Journal*, April 21, 2005, p. A1; and "Nasdaq Agrees to Buy Instinet for \$1.88 Billion," [www.wsj.com](http://www.wsj.com), *Wall Street Online*, April 22, 2005.

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*.<sup>6</sup>

<sup>6</sup> The NYSE is actually a modified auction market, wherein people (through their brokers) bid for stocks. Originally—about 200 years ago—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 off 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 *asked price* (the price at which shares will be sold out of inventory). The bid and asked prices are set at levels designed to keep the inventory in balance. If many buy orders start coming in because of favorable developments or 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 asked 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 exchanges to halt trading in its stock until the announcement has been made and digested by investors.

### 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 Market

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

## The Over-the-Counter and the Nasdaq Stock Markets

While the stocks of most large companies trade on the NYSE, a larger number of stocks trade off the exchange in what has traditionally been 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. If 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 would be difficult. To avoid this problem, some brokerage firms maintain an inventory of such stocks and stand prepared to make a market for these stocks. These “dealers” buy when individual investors want to sell, and then 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 they are not made on the physical location exchanges. These facilities include (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 read off computer screens all across the world. The *bid-ask spread*, which is the difference between bid and asked prices, represents the dealer’s markup, or profit. The dealer’s risk increases if the stock is more volatile, or if 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 over-the-counter market are members of a self-regulatory body known as the *National Association of Securities Dealers (NASD)*, which licenses brokers and oversees trading practices. The computerized network used by the NASD is known as the NASD Automated Quotation System (Nasdaq).

Nasdaq started as just 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. In an effort to become more competitive with the NYSE and with international markets, the Nasdaq and the AMEX merged in 1998 to form the Nasdaq-Amex Market Group. The merger turned out to be less than successful, and in early 2005 the AMEX members agreed to buy the exchange back from the NASD. Since 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 (\$12.6 trillion compared with \$3.7 trillion at year-end 2004). However, reported volume (number of shares traded) is often larger on Nasdaq, and more companies are listed on Nasdaq.<sup>7</sup>

Interestingly, many high-tech companies such as Microsoft and Intel have remained on Nasdaq even though they easily meet the listing requirements of the NYSE. At the same time, however, other high-tech companies such as Gateway, America Online, and Iomega have left Nasdaq for the NYSE. Despite these defec-

<sup>7</sup> One transaction on Nasdaq generally shows up as two separate trades (the buy and the sell). This “double counting” makes it difficult to compare the volume between stock markets.

tions, Nasdaq's growth over the past decade has been impressive. In the years ahead, competition between Nasdaq and the NYSE will no doubt remain fierce.



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

What is the bid-ask spread?

## 5.5 THE MARKET FOR COMMON STOCK

Some companies are so small that their common stocks are not actively traded; they are owned by only a 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 larger 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*.

A recent study found that institutional investors owned about 46 percent of all publicly held common stocks. Included are pension plans (26 percent), mutual funds (10 percent), foreign investors (6 percent), insurance companies (3 percent), and brokerage firms (1 percent). These institutions buy and sell relatively actively, however, so they account for about 75 percent of all transactions. Thus, institutional investors have a significant influence on the prices of individual stocks.

### Closely Held Corporation

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

### Publicly Owned Corporation

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

### Types of Stock Market Transactions

We can classify stock market transactions into three distinct categories:

1. *Trading in the outstanding shares of established, publicly owned companies: the secondary market.* Allied Food Products, the company we analyzed 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.
2. *Additional shares sold by established, publicly owned companies: the primary market.* If Allied 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*.<sup>8</sup>
3. *Initial public offerings by privately held firms: the IPO market.* In the summer of 2004 Google sold shares to the public for the first time at \$85 per share. By September 2005, the stock was selling for \$303, so it had more than tripled. Several years ago, the Coors Brewing Company, which was owned by the Coors family at the time, decided to sell some stock to raise capital needed for a major expansion program.<sup>9</sup> These types of transactions are called

<sup>8</sup> Allied 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.

<sup>9</sup> The stock Coors offered to the public was designated Class B, and it was nonvoting. The Coors family retained the founders' shares, called Class A stock, which carried full voting privileges. The company was large enough to obtain an NYSE listing, but at that time the Exchange had a requirement that listed common stocks must have full voting rights, which precluded Coors from obtaining an NYSE listing.

### 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.

**going public**—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**.

IPOs have received a lot of attention in recent years, primarily because a number of “hot” issues have realized spectacular gains—often in the first few minutes of trading. Consider the 1999 IPO of Red Hat Inc., the open-source provider of software products and services. The company’s underwriters set an offering price of \$14 per share. However, because of intense demand for the issue, the stock’s price rose more than 270 percent the first day of trading.

With the recent stock market decline, we have also seen a decline in the number of new IPOs. Table 5-3 lists the largest, the best performing, and the worst performing IPOs of 2004, and it shows how they performed from their offering dates through year-end 2004. As the table shows, not all IPOs are as well received as Red Hat’s. Moreover, even if you are able to identify a “hot” issue, it is often difficult to purchase shares in the initial offering. These deals are generally *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 after-market, but evidence suggests that if you do not get in on the ground floor the average IPO underperforms the overall market over the long run.<sup>10</sup>

Indeed, the subsequent performance of Red Hat illustrates the risks that arise when investing in new issues. Figure 5-2 plots Red Hat’s stock price from the time of its IPO in 1999 to early February 2005. After its dramatic first day run-up, Red Hat’s stock closed just above \$54 per share. Demand for the stock continued to surge, and the price reached a high of just over \$300 in December 1999. Soon afterward, the company announced a two-for-one stock split. (Note that Figure 5-2 considers the stock split.) The split effectively cut the stock’s price in half, but it doubled the number of shares held by each shareholder. After adjusting for the split, the stock’s price stood at \$132 per share in early January 2000. Soon thereafter, Red Hat’s price tumbled—indeed, by mid-year 2001 its price was \$3.50 per share, which was equivalent to \$7.00 per share before the split. As Figure 5-2 shows, Red Hat’s stock has slowly rebounded over the past few years, but its price still remains below its initial offering price of \$14.

Amidst concerns about the allocation of IPO shares, Google Inc.’s highly publicized 2004 IPO attracted attention because of its size (Google raised \$1.67 billion in stock) and the way it was conducted. Rather than having the offer price set by its investment bankers, Google conducted a Dutch auction in which individual investors directly placed bids for shares. 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 receive all the shares they subscribed to at the offer price. While Google’s IPO was in many ways precedent setting, it remains unclear whether other firms going public in the future will be able, or willing, to use the Dutch auction method to allocate shares in their IPOs.

It is important to recognize that firms can go public without raising any additional capital. For example, the Ford Motor Company was once owned

<sup>10</sup> See Jay R. Ritter, “The Long-Run Performance of Initial Public Offerings,” *Journal of Finance*, Vol. 46, no. 1 (March 1991), pp. 3–27.

**TABLE 5-3** *Initial Public Offerings in 2004*

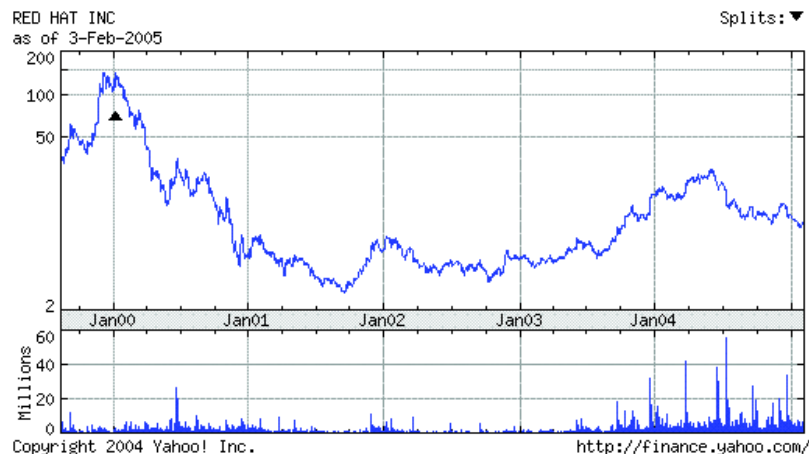
Issuer	Issue Date	U.S. Proceeds (Billions)	PERCENT CHANGE FROM OFFER	
			First Day Trading	Through 12/31/04
<i>The Biggest IPOs</i>				
Genworth Financial	05/24/04	\$2.86	unch.	+38.5%
Assurant	02/04/04	2.02	+12.3%	+38.9
Google	08/18/04	1.92	+18.0	+126.8
Semiconductor Manufacturing Intl.	03/11/04	1.80	-11.3	-38.5
Freescale Semiconductor	07/16/04	1.69	+7.9	+37.1
China Netcom	11/10/04	1.31	+14.1	+22.6
LG Philips	07/15/04	1.06	-6.3	+19.9
Navteq	08/06/04	1.01	+15.0	+110.7
Dex Media	07/21/04	1.01	+2.6	+31.4
Dreamworks Animation	10/27/04	0.93	+38.4	+34.0

Issuer	Issue Date	Offer Price	U.S. Proceeds (Millions)	PERCENT CHANGE FROM OFFER	
				First Day Trading	Through 12/31/04
<i>The Best Performers</i>					
Shanda Interactive Ent	05/12/04	\$11.00	\$169.0	+8.8%	+286.4%
51Job	09/28/04	14.00	84.5	+51.1	+271.2
Marchex	03/30/04	6.50	26.0	+35.4	+223.1
Volterra Semiconductor	07/28/04	8.00	36.5	+3.1	+177.0
eCOST.com	08/27/04	5.80	20.1	+3.5	+175.0
Cogent	09/23/04	12.00	248.4	+49.8	+175.0
Jed Oil	04/05/04	5.50	10.5	+103.6	+165.5
Syneron Medical	08/05/04	12.00	60.0	-10.4	+155.0
Kinetic Concepts	02/23/04	30.00	621.0	+34.7	+154.3
Kanbay International	07/22/04	13.00	106.9	+16.9	+140.8

Issuer	Issue Date	Offer Price	U.S. Proceeds (Millions)	PERCENT CHANGE FROM OFFER	
				First Day Trading	Through 12/31/04
<i>The Worst Performers</i>					
Xcyte Therapies	03/16/04	\$ 8.00	\$ 33.6	-8.6%	-65.5%
Staktek Holdings	02/05/04	13.00	145.5	+14.5	-64.3
AlphaSmart	02/06/04	6.00	26.4	+2.0	-50.8
Corgentech	02/12/04	16.00	110.4	+20.3	-48.3
Corcept Therapeutics	04/14/04	12.00	54.0	+1.9	-47.9
Daystar Technologies	02/05/04	5.00	10.6	-1.0	-43.0
Infosonics	06/16/04	6.00	12.0	-2.5	-40.3
Linktone	03/03/04	14.00	86.0	+24.4	-40.0
Semiconductor					
Manufacturing International	03/11/04	17.50	1,803.0	-11.3	-38.5
Cherokee International	02/19/04	14.50	110.1	+13.8	-33.7

Source: "Initial Public Offerings of Stock Bounce Back in 2004," *The Wall Street Journal*, January 3, 2005, p. R10.

**FIGURE 5-2** Red Hat Inc.'s Stock Price Performance from Its IPO to February 2005



Source: [finance.yahoo.com](http://finance.yahoo.com).

exclusively by the Ford family. When Henry Ford died, he left a substantial part of his stock to the Ford Foundation. When the Foundation later sold some of it to the general public, the Ford Motor Company went public, even though the company itself raised no capital in the transaction.



Differentiate between closely held and publicly owned corporations.

Differentiate between primary and secondary markets.

What is an IPO?

What is a Dutch auction? Why is it used?

## 5.6 STOCK MARKETS AND RETURNS

Anyone who has ever invested in the stock market knows that there can be, and generally are, large differences between *expected* and *realized* prices and returns. Figure 5-3 shows how total realized portfolio returns have varied from year to year. As logic would suggest (and as we demonstrate in Chapter 8), a stock's expected return as estimated by investors at the margin is always positive, for otherwise investors would not buy the stock. However, as Figure 5-3 shows, in some years actual returns are negative.

### Stock Market Reporting

Up until a couple of years ago, the best source of stock quotations was the business section of a daily newspaper, 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 all during the day from a wide variety of Internet



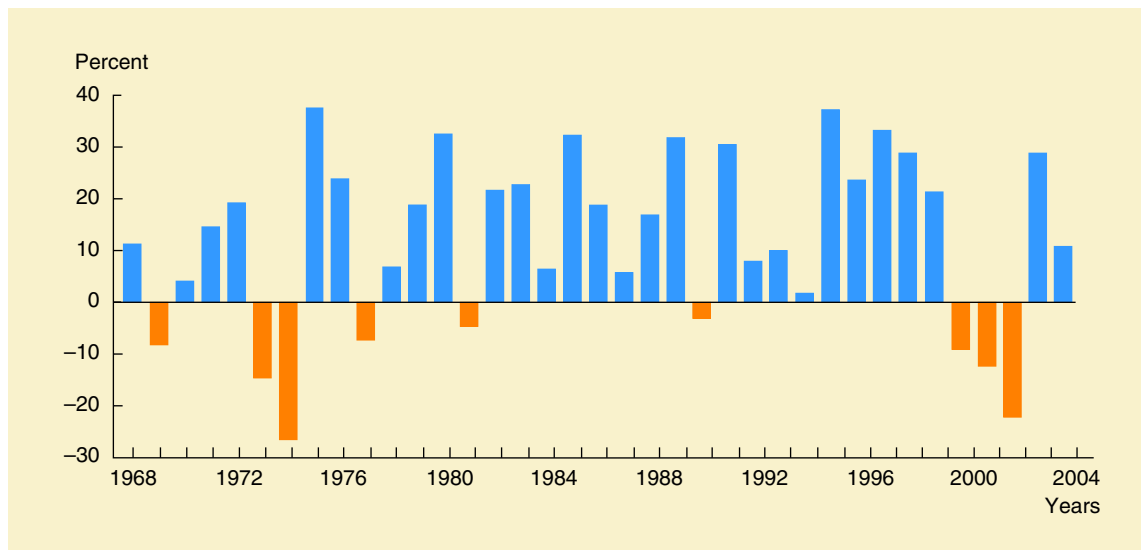
sources.<sup>11</sup> One of the best is Yahoo!, and Figure 5-4 shows a detailed quote for GlaxoSmithKline PLC (GSK). As the heading shows, GlaxoSmithKline is traded on the New York Stock Exchange under the symbol GSK. (The NYSE is just one of many world markets on which the stock trades.) The first two rows of information show that GSK last traded at \$45.55, and the stock traded thus far during the day from as low as \$45.40 and as high as \$45.65. (Note that the price is reported in decimals rather than fractions, reflecting a recent change in trading conventions.) The last trade was at 11:05 A.M. ET on February 4, 2005, and its price range during the past 52 weeks was from \$38.80 to \$47.59.

The next three lines show that GSK opened trading on February 4th at \$45.42, that it closed on February 3rd at \$44.65, and that its price rose by \$0.90 (or a 2.02 percent increase) from the previous close to the current price. So far during the day, 401,700 shares had traded hands. GlaxoSmithKline's average daily trading volume (based on the past three months) was 1,349,318 shares, so trading was relatively light that day. The total value of all of GlaxoSmithKline's stock, called its market cap, was \$130.09 billion.

The last three lines report other market information for GSK. If it were trading on Nasdaq rather than a listed exchange, the most recent bid and ask quotes from dealers would have been shown. However, because it trades on the NYSE, these data are not available. GSK's P/E ratio (price per share divided by the most recent 12 months' earnings) is 17.16, and its earnings per share for the most recent 12 months was \$2.66. (Note that ttm stands for "trailing 12 months"—in other words, the most recent 12 months.) The mean of the analysts' one-year target price for GSK is \$49.67. GSK's dividend is \$1.46 per share, so the quarterly dividend is \$0.365 per share, and the dividend yield, which is the annual dividend divided by the price, is 3.24 percent.

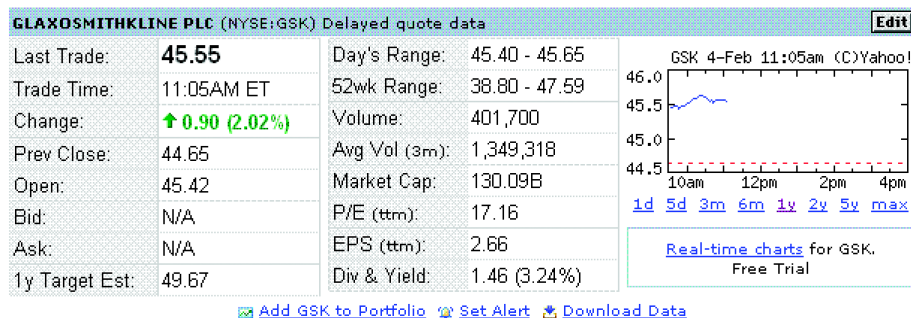
FIGURE 5-3

### S&P 500 Index, Total Returns: Dividend Yield + Capital Gain or Loss, 1968–2004



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

<sup>11</sup> Most free sources provide quotes that are delayed by 15 minutes. Real time quotes can be obtained for a fee.

**FIGURE 5-4** Stock Quote for GlaxoSmithKline, February 4, 2005

Source: [finance.yahoo.com](http://finance.yahoo.com).

In Figure 5.4, 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.

## Stock Market Returns

In Chapters 8 and 9 we will discuss in detail how stock returns are calculated, the connection between stock market risk and returns, and the techniques that analysts use to value stocks. However, it is useful at this point for you to have a rough idea how stocks have performed in recent years. Figure 5-3 shows how the returns on large U.S. stocks have varied over the past years, and the box entitled “Measuring the Market” provides some information on the major U.S. stock market indices and their performances since the mid-1990s.

Since 1968 the market trend has been strongly up, but by no means does it go up every year. Indeed, as we can see from Figure 5-3, the overall market has been down in 9 of the 37 years, including the three consecutive years of 2000–2002. The stocks of individual companies have likewise gone up and down.<sup>12</sup> 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 put their companies into the winners’ column, but they don’t always succeed. In subsequent chapters, we will examine the decisions managers make to increase the odds of their firms performing well in the marketplace.



Would you expect a portfolio that consisted of the S&P 500 stocks to be more or less risky than a portfolio of Nasdaq stocks?

If we constructed a chart like Figure 5-3 for an average S&P 500 stock, do you think it would show more or less volatility? Explain.

<sup>12</sup> If we constructed a graph like Figure 5-3 for individual stocks rather than for the index, far greater variability would be shown. Also, if we constructed a graph like Figure 5-3 for bonds, it would have similar ups and downs, but the bars would be smaller, indicating that gains and losses on bonds are generally 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 will discuss bonds in detail in Chapter 7.

## 5.7 STOCK MARKET EFFICIENCY

Figure 1-1 (presented back in Chapter 1) suggests that a stock's price is affected by its intrinsic value, which is determined by the true level and riskiness of the cash flows it is likely to provide, and investors' perceptions about the stock's intrinsic value. In a well-functioning market, investors' perceptions should be closely related to the stock's intrinsic value, in which case the stock price would be a reasonably accurate reflection of its true value.

A body of theory called the **efficient markets hypothesis (EMH)** holds (1) that stocks are always in equilibrium and (2) that it is impossible for an investor to consistently "beat the market." Essentially, those who believe in the EMH note that there are 100,000 or so full-time, highly trained, professional analysts and traders operating in the market, while there are fewer than 3,000 major stocks. Therefore, if each analyst followed 30 stocks (which is about right, as analysts tend to specialize in the stocks in a specific industry), there would on average be 1,000 analysts following each stock. Further, these analysts work for organizations such as Goldman Sachs, Merrill Lynch, Citigroup, Prudential, and the like, which have billions of dollars that can be used to take advantage of bargains. In addition, as a result of SEC disclosure requirements and electronic information networks, as new information about a stock becomes available, these 1,000 analysts generally receive and evaluate it at about the same time. Therefore, the price of a stock will adjust almost immediately to any new development. That makes it very difficult for anyone to consistently pick stocks that will beat the market.

### Efficient Markets Hypothesis (EMH)

*The hypothesis that securities are typically in equilibrium—that they are fairly priced in the sense that the price reflects all publicly available information on each security.*

### Levels of Market Efficiency

If markets are truly efficient, then stock prices will rapidly adjust to all relevant information as it becomes available. This raises an important question: What types of information are available to investors and, therefore, incorporated into stock prices? Financial theorists have discussed three forms, or levels, of market efficiency.

#### Weak-Form Efficiency

The *weak form* of the EMH states that all information contained in past stock price movements is fully reflected in current market prices. If this were true, then information about recent trends in stock prices would be of no use in selecting stocks—the fact that a stock has risen for the past three days, for example, would give us no useful clues as to what it will do today or tomorrow. People who believe that weak-form efficiency exists also believe that "tape watchers" and "chartists" are wasting their time.<sup>13</sup> For example, after studying the past history of the stock market, a chartist might "discover" the following pattern: If a stock falls three consecutive days, its price typically rises 10 percent the following day. The technician would then conclude that investors could make money by purchasing a stock whose price has fallen for three consecutive days.

But if this pattern truly existed, wouldn't other investors also discover it, and then why would anyone be willing to sell a stock after it had fallen three consecutive days if he or she knows the stock's price would likely increase by 10 percent the next day? In other words, if a stock were selling at \$40 per share after falling three consecutive days, why would investors sell the stock at \$40 if they expect it to rise to \$44 per share the next day? Those who believe in weak-form efficiency argue that if the stock were really likely to rise to \$44 per share

<sup>13</sup> Tape watchers are people who watch the NYSE tape, while chartists plot past patterns of stock price movements. Both are called "technicians," and both believe that they can tell if something is happening to the stock that will cause its price to move up or down in the near future.

## Measuring the Market

*Stock indexes* are designed to show the performance of the stock market. The problem is that there are many stock indexes, and it is difficult to determine which index best reflects market actions. Some are designed to represent the whole equity market, some to track the returns of certain industry sectors, and others to track the returns of small-cap, mid-cap, or large-cap stocks. We discuss below three of the leading indexes.

### Dow Jones Industrial Average

Unveiled in 1896 by Charles H. Dow, the Dow Jones Industrial Average (DJIA) provided a benchmark for comparing individual stocks with the overall market, for ascertaining the trend in stock prices over time, and for comparing the market with other economic indicators. The industrial average began with just 10 stocks, was expanded in 1916 to 20 stocks, and then to 30 in 1928. Also in 1928, *The Wall Street Journal* editors began adjusting the index for stock splits, and making substitutions. Today, the DJIA still includes 30 companies. They represent almost a fifth of the market value of all U.S. stocks, and all are both leading companies in their industries and widely held by individual and institutional investors. Visit <http://www.dowjones.com> to get more information about the DJIA. You can find out how it is calculated, the current divisor, the companies that make up the DJIA, more history about the DJIA, and other interesting facts. In addition, there is a DJIA time line annotated with 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 as being the leading companies in the leading industries, and for accurately reflecting the U.S. stock market. It is value weighted, so the largest companies (in terms of value) have the greatest influence. The S&P 500 Index is used for benchmarking by 97 percent of all U.S. money managers and pension plan sponsors, and approximately \$700 billion is managed so as to obtain the same performance as this index (that is, in indexed funds).

### Nasdaq Composite Index

The Nasdaq Composite Index measures the performance of all common stocks listed on the Nasdaq stock market. Currently, it includes more than 5,000 companies, and because many of the technology-sector companies are traded on the computer-based Nasdaq exchange, this index is generally regarded as an economic indicator of the high-tech industry. Microsoft, Intel, and Cisco Systems are the three largest Nasdaq companies, and they comprise a high percentage of the index's value-weighted market capitalization. For this reason, substantial movements in the same direction by these three companies can move the entire index.

tomorrow, its price would actually rise to somewhere near \$44 per share immediately, thereby eliminating the trading opportunity. Consequently, weak-form efficiency implies that any information that comes from an examination of past stock prices cannot be used to make money by predicting future stock prices.

### Semistrong-Form Efficiency

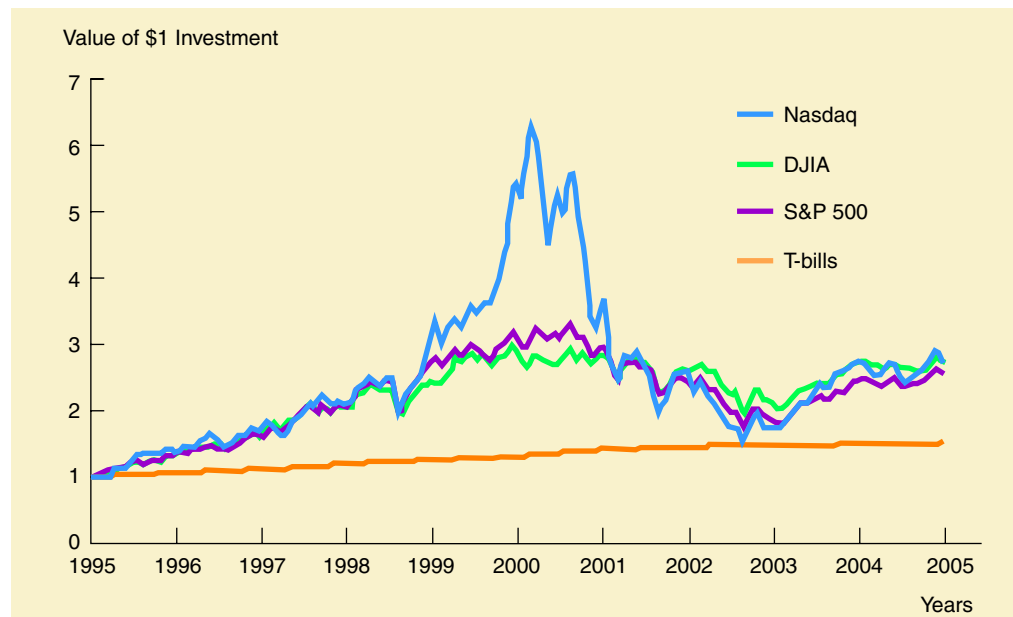
The *semistrong form* of the EMH states that current market prices reflect all *publicly available* information. Therefore, if semistrong-form efficiency exists, it would do no good to pore over annual reports or yesterday's *Wall Street Journal* looking at sales and earnings trends and various types of ratios based on historical data because market prices would have adjusted to any good or bad news contained in such

### Recent Performance

The accompanying figure plots the value that an investor would now have if he or she had invested \$1.00 in each of the three indexes on January 1, 1995. The returns on the three indexes are compared with an investment strategy that only invests in T-bills. For the returns on T-bills, the one-year Treasury constant maturity rate is used. Over the past 10 years, each of these indexes performed quite well through 1999. However, for a couple years each index stumbled before begin-

ning to rebound again in 2003. During the last 10 years the average annualized returns of these indexes ranged from 9.8 percent for the S&P 500 to 10.5 percent for the Nasdaq Composite Index. The Nasdaq experienced a huge bubble in 1999, reflecting overly optimistic valuations of technology companies. However, in 2000 the bubble burst and technology stock valuations spiraled downward, causing the Nasdaq Index to revert back to a level comparable to the S&P 500 and Dow Jones Industrial Average Index.

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



reports back when the news first came out over the Internet. With semistrong-form efficiency, investors should not expect to earn above-average returns except with good luck or information that is not publicly available.<sup>14</sup> However, insiders (for example, CEOs and CFOs) who have information that is not publicly available are able to earn above-average returns even under semistrong-form efficiency.

Another implication of semistrong-form efficiency is that whenever information is released to the public, stock prices will respond only if the information is different from what had been expected. If, for example, a company announces a

<sup>14</sup> Strictly speaking, these returns should be adjusted for risk. We discuss the relationship between risk and return in Chapter 8.

30 percent increase in earnings, and if that increase is about what analysts had been expecting, the announcement should have little or no effect on the company's stock price. On the other hand, the stock price would probably fall if analysts had expected earnings to increase by 50 percent, but it probably would rise if they had expected a 10 percent increase.

### Strong-Form Efficiency

The *strong form* of the EMH states that current market prices reflect all pertinent information, whether publicly available or privately held. If this form holds, even insiders would find it impossible to earn abnormally high returns in the stock market.<sup>15</sup>

Many empirical studies have been conducted to test for the three forms of market efficiency. Most of these studies suggest that the stock market is indeed highly efficient in the weak form, reasonably efficient in the semistrong form (at least for the larger and more widely followed stocks), but not true for the strong form because abnormally large profits are often earned by those with inside information.

### Implications of Market Efficiency

If the EMH were correct, it would be a waste of time for most of us to seek bargains by analyzing stocks. That follows because, if stock prices already reflect all publicly available information and hence are fairly priced, we can "beat the market" only by luck or with inside information, making it difficult, if not impossible, for most investors to consistently outperform the market averages. To support this viewpoint, efficient market proponents often point out that even the professionals who manage mutual fund portfolios do not, on average, outperform the overall stock market as measured by an index like the S&P 500.<sup>16</sup> Indeed, the relatively poor performance of actively managed mutual funds helps explain the growing popularity of indexed funds, where administrative costs are relatively low. Rather than spending time and money trying to find undervalued stocks, index funds try instead to match overall market returns by buying the basket of stocks that makes up a particular index, such as the S&P 500.<sup>17</sup>

<sup>15</sup> Over the years, several cases of illegal insider trading have made the news headlines. These cases involved employees of several major investment banking houses and even an employee of the SEC. In the most famous case, Ivan Boesky admitted to making \$50 million by purchasing stocks of firms he knew were about to merge. He went to jail, and he had to pay a large fine, but he helped disprove the strong-form EMH. More recently, Martha Stewart was imprisoned after being convicted on obstruction of justice charges surrounding a federal investigation of insider trading of ImClone Systems Inc. shares.

<sup>16</sup> For a discussion of the recent performance of actively managed funds, see Jonathan Clements, "Resisting the Lure of Managed Funds," *The Wall Street Journal*, February 27, 2001, p. C1.

<sup>17</sup> We should also note that some Wall Street pros have consistently beaten the market over many years, which is inconsistent with the EMH. An interesting article in the April 3, 1995, issue of *Fortune* (Terence P. Paré, "Yes, You Can Beat the Market") argued strongly against the EMH. Paré suggested that each stock has a fundamental value, but when good or bad news about it is announced, most investors fail to interpret this news correctly. As a result, stocks are generally priced above or below their long-term values.

Think of Figure 1-1, which was illustrated in Chapter 1, with stock price on the vertical axis and years on the horizontal axis. A stock's fundamental value might be moving up steadily over time as it retains and reinvests earnings. However, its actual price might fluctuate about the intrinsic value line, overreacting to good or bad news and indicating departures from equilibrium. Successful value investors, according to Paré, use fundamental analysis to identify stocks' intrinsic values, and then they buy stocks that are undervalued and sell those that are overvalued.

Paré's argument implies that stocks are at times systematically out of equilibrium and that investors can act on this knowledge to beat the market. That position may turn out to be correct, but it may also be that the superior performance Paré noted simply demonstrates that some people are better at obtaining and interpreting information than others, or have been lucky in the past.



It is important to understand that market efficiency does not imply that all stocks are always priced correctly. With hindsight, it is apparent that at any point in time the situation shown in Figure 1-1 back in Chapter 1 tends to hold true, with some stocks overvalued and others undervalued. However, as the efficient markets hypothesis implies, it is hard to identify ahead of time the stocks in each category. To beat the market, you must have above-average information, above-average analytical skills, or above-average luck.

Finally, it is important to understand that even if markets are efficient and all stocks are fairly priced, an investor should still be careful when selecting stocks for his or her portfolio. To earn the greatest expected return with the least amount of risk, the portfolio should be diversified, with a mix of stocks from various industries. We will discuss diversification in greater detail in Chapter 8.

## Is the Stock Market Efficient?

During the past 25 years, many empirical studies have been conducted to test the validity of the three forms of market efficiency. Until 10 years ago, most of these studies suggested that the stock market was highly efficient in the weak form and reasonably efficient in the semistrong form, at least for the larger and more widely followed stocks. However, the evidence also suggested that the strong form EMH did not hold, because those who possessed inside information could and did (illegally) make abnormal profits.

More recently, the empirical support for the EMH has been somewhat diminished. As we indicate in the **behavioral finance** box, skeptics point to the recent stock market bubble and suggest that at the height of the boom the prices of the stocks of many companies, particularly in the technology sector, vastly exceeded their intrinsic values. These skeptics suggest that investors are not simply machines that rationally process all available information—rather, a variety of psychological and perhaps irrational factors also come into play. Indeed, researchers have begun to incorporate elements of cognitive psychology in an effort to better understand how individuals and entire markets respond to different circumstances.<sup>18</sup>

Keep in mind that the EMH does not assume that all investors are rational. Rather, it assumes that whenever stock prices deviate from their intrinsic values due to the availability of new information, investors will quickly take advantage of these mispricings by buying undervalued stocks and selling overvalued stocks. Thus, investors' actions work to drive prices to their equilibrium level. Critics of the EMH stress, however, that the stock market is inherently risky and that rational investors trading in an irrational market can lose a lot of money even if they are ultimately proven to be correct. For example, a "rational" investor in mid-1999 might have concluded that the Nasdaq was overvalued when it was trading at 3,000. If that investor had acted on that assumption, he or she would have lost a lot of money the following year when the Nasdaq soared to over 5,000 as "irrational exuberance" pushed the prices of already overvalued stocks to even higher levels. Ultimately, if our "rational investor" had the courage and patience to hold on, he or she would have been vindicated, because the Nasdaq subsequently fell to about 1,300.

### Behavioral Finance

*Incorporates elements of cognitive psychology into finance in an effort to better understand how individuals and entire markets respond to different circumstances.*

<sup>18</sup> Three noteworthy sources for students interested in behavioral finance are Richard H. Thaler, Editor, *Advances in Behavioral Finance* (New York: Russell Sage Foundation, 1993); Andrei Shleifer, *Inefficient Markets: An Introduction to Behavioral Finance* (New York: Oxford University Press, 2000); and Nicholas Barberis and Richard Thaler, "A Survey of Behavioral Finance," Chapter 18, *Handbook of the Economics of Finance*, edited by George Constantinides, Milt Harris, and René Stulz, part of the *Handbooks in Economics Series* (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* (New York: W.W. Norton & Company, 1999).

## A Closer Look at Behavioral Finance Theory

The efficient markets hypothesis (EMH) remains one of the cornerstones of modern finance theory. It implies that, on average, assets trade at prices equal to their intrinsic values. As we note in the text, 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 will buy the stock. Their actions will quickly push prices back to their equilibrium 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 prices cannot be systematically wrong unless you believe that market participants are unable or unwilling to take advantage of profitable trading opportunities.

While the logic behind the EMH is compelling, many events in the real world seem to be inconsistent with the EMH. This has spurred a growing field that is called *behavioral finance theory*. 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 and Amos Tversky and Richard Thaler, who is a professor of finance at the University of Chicago. Their work has encouraged a growing number of scholars to work in this promising area of research.

Professor Thaler and his colleague, Nicholas Barberis, have summarized much of this research in a recent article, which is cited below. They argue that behavioral finance theory's criticism of the EMH rests on two important building blocks. 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 buy the stock for fear that the same forces that pushed the price down may work to keep it artificially low for a long period of time. On the other side, during the recent stock market bubble, many traders who believed (correctly!) that stock prices were too high lost a lot of money selling stocks in the early stages of the bubble because stock prices went even higher before they eventually collapsed.

While the first building block explains why mispricings may persist, the second tries to understand how mispricings can occur in the first place. This component is where the insights from psychology come into play. For example, Kahneman and Tversky suggested that individuals view potential losses and potential gains very differently. If you ask an average person whether he or she would rather have \$500 with certainty or flip a fair coin and receive \$1,000 if a head comes up and nothing if it comes out tails,

most would prefer the certain \$500, which suggests an aversion to risk. However, if you ask the same person whether he or she would rather pay \$500 with certainty or flip a coin and pay \$1,000 if it's heads and nothing if it's tails, most indicate that they would 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 risks, 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 keep investing in these stocks, even as their prices went higher. Other evidence suggests that individuals tend to overestimate their true abilities. For example, a large majority (upward of 90 percent in some studies) of us believe that we have above-average driving ability or 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.

Recent research by Ulrike Malmendier of the Stanford Graduate School of Business and Geoffrey Tate of the Wharton School suggests that overconfidence leads managers to overestimate their ability and the quality of their projects. This result may explain why so many corporate projects fail to live up to their stated expectations.

Sources: Nicholas Barberis and Richard Thaler, "A Survey of Behavioral Finance," Chapter 18, *Handbook of the Economics of Finance*, edited by George Constantinides, Milt Harris, and René Stulz, part of the *Handbooks in Economics Series* (New York: Elsevier/North-Holland, 2003); and Ulrike Malmendier and Geoffrey Tate, "CEO Overconfidence and Corporate Investment," Stanford Graduate School of Business Research Paper #1799, June 2004.

The events of recent years, and the new ideas developed by researchers in behavioral finance, suggest that the stock market is not always efficient. Still, the logic behind the EMH is compelling, and most researchers believe that markets are generally efficient in the long run.



What is the efficient markets hypothesis (EMH)?

What are the differences among the three forms of the EMH: (1) weak form, (2) semistrong form, and (3) strong form?

What are the implications of the EMH for financial decisions?

What is behavioral finance? What do the new ideas in this area tell us about the stock market?

## Tying It All Together

In this chapter we provided a brief overview of how capital is allocated and the financial markets, instruments, and institutions used in the allocation process. We discussed physical location exchanges and electronic markets for common stocks, stock price reporting, and stock indexes. We demonstrated that security prices are volatile—investors expect to make money, and over time they generally do, 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 either business newspapers or various Internet sites. You should also recognize that the theory of financial markets is a “work in progress,” and countless work remains to be done.

## SELF-TEST QUESTIONS AND PROBLEMS

**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 banking house; commercial banks; financial services corporations
- g. Mutual funds; money market funds
- h. Physical location exchanges; over-the-counter market (OTC); 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

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- 5-1** How does a cost-efficient capital market help to reduce the prices of goods and services?
- 5-2** Describe the different ways in which capital can be transferred from suppliers of capital to those who are demanding capital.
- 5-3** Is an initial public offering an example of a primary or a secondary market transaction?
- 5-4** Indicate whether the following instruments are examples of money market or capital market transactions.
- U.S. Treasury bills
  - Long-term corporate bonds
  - Common stocks
  - Preferred stocks
  - Dealer commercial paper
- 5-5** What would happen to the U.S. standard of living if people lost faith in the safety of our financial institutions? Why?
- 5-6** What types of changes have financial markets experienced during the last two decades? Have they been perceived as positive or negative changes? Explain.
- 5-7** Differentiate between dealer markets and stock markets that have a physical location.
- 5-8** Identify and briefly compare the two leading stock exchanges in the United States today.
- 5-9** Describe the three different forms of market efficiency.
- 5-10** Investors expect a company to announce a 10 percent increase in earnings, but instead the company announces a 1 percent increase. If the market is semistrong-form efficient, which of the following would you expect to happen?
- The stock's price increases slightly because the company had a slight increase in earnings.
  - The stock's price falls because the earnings increase was less than expected.
  - The stock's price stays the same because earnings announcements have no effect if the market is semistrong-form efficient.
- 5-11** 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 generally charge higher fees than mutual funds.
  - 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.
  - The efficient market hypothesis assumes that all investors are rational.

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## Integrated Case

### Smyth Barry & Company, Part I

- 5-1 Financial markets and institutions** Assume that you recently graduated with a degree in finance and have just reported to work as an investment advisor 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 has just come 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 also very bright, and, therefore, she would like to understand in general terms what will happen to her money. Your boss has developed the following set of questions that you must ask and answer to explain the U.S. financial system to Varga.

- a. Describe the three primary ways in which capital is transferred between savers and borrowers.
- b. What is a market? Differentiate between the following types of markets: physical asset versus financial markets, spot versus futures markets, money versus capital markets, primary versus secondary markets, and public versus private markets.
- c. Why are financial markets essential for a healthy economy and economic growth?
- d. What are derivatives? How can derivatives be used to reduce risk? Can derivatives be used to increase risk?
- e. Briefly describe each of the following financial institutions: commercial banks, investment banks, mutual funds, and hedge funds.
- 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 is the efficient markets hypothesis (EMH), what are its three forms, and what are its implications?
- j. After the consultation with Michelle she asked you a few final questions:
  - (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 a lot of that company's stock. Assuming the stock market is semistrong-form 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 get as many shares in the IPO as possible, and would even be willing to buy the shares in the open market right after the issue. What advice do you have for her?



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