


# CHAPTER 2 Financial Markets and Institutions

## *Efficient Financial Markets Are Necessary for a Growing Economy*

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; and with the click of a mouse, an investor can buy GE stock on the New York Stock Exchange, deposit funds in a European bank, or purchase a mutual fund that invests in Chinese securities.

This globalization was dramatically illustrated in the fall of 2007. The U.S. housing market had been exceedingly strong, which bolstered the entire economy. Rising home values enabled people to borrow on home equity loans to buy everything from autos to Caribbean vacations. However, lenders had been making loans that required no down payment, that had "teaser" rates programmed to rise sharply after a year or two, and that were made to borrowers whose credit had not been carefully checked. These relaxed lending standards enabled people who could not have bought homes in the past to buy a home now; but the loans were getting riskier, and about 30% were classified as "subprime."

The risk buildup was obscured by fancy "financial engineering." A few years ago people obtained mortgage loans primarily from local banks. The banks kept the mortgages, collected the interest, and likely knew how risky the loans were. In recent years, the situation has changed. Now mortgage brokers originate, for example, 500 loans for $200,000 each, or $100 million in total, and then sell them to an investment bank. The bank uses the loans as collateral for $100 million of bonds, which are divided into classes such as A, B, and C. The A bonds have first claim on cash from the mortgages and are rated AAA; the Bs are next, which are also highly rated; and even the Cs are rated "investment grade." Initially, times were good; the interest and repayment of principal from the mortgages were sufficient to cover required payments to all of the bonds. However, recently, some of the mortgages began going into default, and

inflows were no longer sufficient to cover required payments to all of the bonds.

When home prices are rising, borrowers' equity also rises. That enables borrowers who cannot keep up with their payments to refinance—or sell the house for enough to pay off the mortgage. But when home prices start falling, refinancings and profitable sales are impossible. That triggers mortgage defaults, which, in turn, triggers defaults on the riskiest bonds. People become worried about the B and even the A bonds, so their values also fall. The banks and other institutions that own the bonds are forced to write them down on their balance sheets.

Institutions that hold mortgage-backed bonds—many of which are subsidiaries of banks—raised the money to buy the bonds by borrowing on a 3-month basis from money market funds of similar lenders. As risks became more apparent, the short-term lenders refused to roll over these loans; thus, the bondholders were forced to sell bonds to repay their short-term loans. Those sales depressed the bond market even further, causing further bond sales, lower bond prices, and more write-downs. A downward spiral and a severe credit crunch began.

Banks across the globe had invested in these bonds; and huge losses were reported by Citigroup, Deutsche Bank (Germany's largest), and UBS (Switzerland's largest). These losses reduced banks' willingness and ability to make new loans, which threatened economies in many nations. The Federal Reserve and other central banks lowered interest rates and eased the terms under which they extended credit to banks, and the banks themselves joined forces to head off a downward spiral. The headline in *The Wall Street Journal* on October 13, 2007, read as follows: "Big Banks Push $100 Billion Plan to Avert Credit Crunch." The article described how government officials are working with bankers to head off an impending crisis. However, working things out will be difficult. Many think that the banks whose actions contributed to the problems—especially Citigroup—should not be bailed out. Others think that the crisis must be averted because the U.S. economy and other economies will be badly damaged if the downward spiral continues.

All of this demonstrates the extent to which markets are interconnected, the impact markets can have on countries and on individual companies, and the complexity of capital markets.

*Source:* Carrick Mollenkamp, Ian McDonald, and Deborah Solomon, "Big Banks Push $100 Billion Plan to Avert Crunch: Fund Seeks to Prevent Mortgage-Debt Selloff; Advice from Treasury," *The Wall Street Journal*, October 13, 2007, p. A1.

# PUTTING THINGS IN PERSPECTIVE

**In Chapter 1, we saw that a firm's primary goal is to maximize the price of its stock. Stock prices are determined in the financial markets; so if financial managers are to make good decisions, they must understand how these markets operate. In addition, individuals make personal investment decisions; so they too need to know something about financial markets and the institutions that operate in those markets. Therefore, in this chapter, we describe the markets where capital is raised, securities are traded, and stock prices are established and the institutions that operate in these markets.**

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

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

## 2-1 THE CAPITAL ALLOCATION PROCESS

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

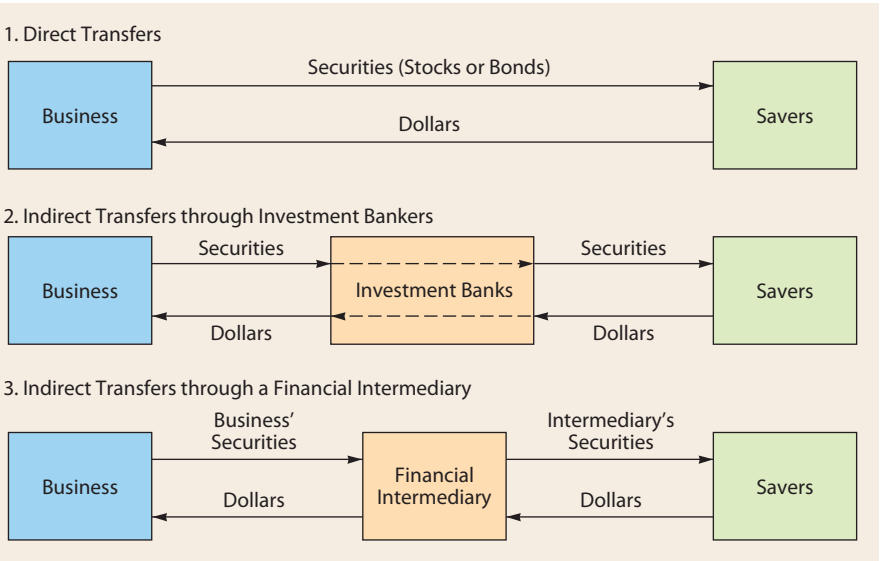
On the other hand, some individuals and firms have incomes that exceed their current expenditures, in which case they have funds available to invest. For example, Carol Hawk has an income of $36,000, but her expenses are only $30,000. That leaves her with $6,000 to invest. Similarly, Microsoft has accumulated roughly $23.5 billion of cash. What can Microsoft do with this money until it is needed in the business?

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

In a well-functioning economy, capital flows efficiently from those with surplus capital to those who need it. This transfer can take place in the three ways described in Figure 2-1.

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

**FIGURE 2-1** Diagram of the Capital Formation Process



through any type of financial institution. The business delivers its securities to savers, who, in turn, give the firm the money it needs. This procedure is used mainly by small firms, and relatively little capital is raised by direct transfers.

2. As shown in the middle section, transfers may also go through an investment bank (iBank) such as Citigroup, 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 then sells these same securities to savers. The businesses' securities and the savers' money merely "pass through" the investment bank. However, because the investment bank buys and holds the securities for a period of time, it is taking a risk—it may not be able to resell the securities to savers for as much as it paid. Because new securities are involved and the corporation receives the proceeds of the sale, this transaction is called a *primary market transaction*.
3. Transfers can also be made through a *financial intermediary* such as a bank, an insurance company, or a mutual fund. Here the intermediary obtains funds from savers in exchange for its securities. The intermediary uses this money to buy and hold businesses' securities, while the savers hold the intermediary's securities. For example, a saver deposits dollars in a bank, receiving a certificate of deposit; then the bank lends the money to a business in the form of a mortgage loan. Thus, intermediaries literally create new forms of capital—in this case, certificates of deposit, which are safer and more liquid than mortgages and thus are better for most savers to hold. The existence of intermediaries greatly increases the efficiency of money and capital markets.

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

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


Name three ways capital is transferred between savers and borrowers.

Why are efficient capital markets necessary for economic growth?

[1]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. 10766, September 2004.

## 2-2 FINANCIAL MARKETS

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

### 2-2a Types of Markets

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

1. *Physical asset markets versus financial asset markets*. *Physical asset markets* (also called "tangible" or "real" asset markets) are for products such as wheat, autos, real estate, computers, and machinery. *Financial asset markets*, on the other hand, deal with stocks, bonds, notes, and mortgages. Financial markets also deal with *derivative securities* whose values are *derived* from changes in the prices of other assets. A share of Ford stock is a "pure financial asset," while an option to buy Ford shares is a derivative security whose value depends on the price of Ford stock. The bonds backed by subprime mortgages discussed at the beginning of this chapter are another type of derivative, as the values of these bonds are derived from the values of the underlying mortgages.

**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.*

2. *Spot markets versus futures markets*. **Spot markets** are markets in which assets are bought or sold for "on-the-spot" delivery (literally, within a few days). **Futures markets** are markets in which participants agree today to buy or sell an asset at some future date. For example, a farmer may enter into a futures contract in which he agrees today to sell 5,000 bushels of soybeans 6 months from now at a price of $5 a bushel. To continue that example, a food processor that needs soybeans in the future may enter into a futures contract in which it agrees to buy soybeans 6 months from now. Such a transaction can reduce, or *hedge,* the risks faced by both the farmer and the food processor.

**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).*

3. *Money markets versus capital markets*. **Money markets** are the markets for short-term, highly liquid debt securities. The New York, London, and Tokyo money markets are among the world's largest. **Capital markets** are the markets for intermediate- or long-term debt and corporate stocks. The New York Stock Exchange, where the stocks of the largest U.S. corporations are traded, is a prime example of a capital market. There is no hard-and-fast rule, but in a description of debt markets, *short-term* generally means less than 1 year, *intermediate-term* means 1 to 10 years, and *long-term* means more than 10 years.

**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.*

4. *Primary markets versus secondary markets*. **Primary markets** are the markets in which corporations raise new capital. If GE were to sell a new issue of common stock to raise capital, a primary market transaction would take place. The corporation selling the newly created stock, GE, receives the proceeds from the sale in a primary market transaction. **Secondary markets** are markets in which existing, already outstanding securities are traded among investors. Thus, if Jane Doe decided to buy 1,000 shares of GE stock, the purchase would occur in the secondary market. The New York Stock Exchange is a secondary market because it deals in outstanding, as opposed to newly issued, stocks and bonds. Secondary markets also exist for mortgages, other types of loans, and other financial assets. The corporation whose securities are being traded is not involved in a secondary market transaction and thus does not receive funds from such a sale.

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

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

**Public Markets**
*Markets in which standardized contracts are traded on organized exchanges.*

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

A healthy economy is dependent on efficient funds transfers from people who are net savers to firms and individuals who need capital. Without efficient transfers, the economy could not function: Carolina Power & Light could not raise capital, so Raleigh's citizens would have no electricity; the Johnson family would not have adequate housing; Carol Hawk would have no place to invest her savings; and so forth. Obviously, the level of employment and productivity (i.e., the standard of living) would be much lower. Therefore, it is essential that financial markets function efficiently—not only quickly, but also inexpensively.[2]

Table 2-1 is a listing of the most important instruments traded in the various financial markets. The instruments are arranged in ascending order of typical length of maturity. As we go through this book, we will look in more detail at many of the instruments listed in Table 2-1. For example, we will see that there are many varieties of corporate bonds, ranging from "plain vanilla" bonds to bonds that can be converted to common stocks to bonds whose interest payments vary depending on the inflation rate. Still, the table provides an overview of the characteristics and costs of the instruments traded in the major financial markets.

## 2-2b Recent Trends

Financial markets have experienced many changes in recent years. Technological advances in computers and telecommunications, along with the globalization of banking and commerce, have led to deregulation, which has increased competition throughout the world. As a result, there are more efficient, internationally linked markets, which are far more complex than what existed a few years ago. While these developments have been largely positive, they have also created problems for policy makers. At one conference, former Federal Reserve Board Chairperson 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

[2]As the countries of the former Soviet Union and other Eastern European nations move toward capitalism, 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 impossible without a good system for allocating capital within the economy.

**Table 2-1** Summary of Major Market Instruments, Market Participants, and Security Characteristics

| | | | SECURITY CHARACTERISTICS | | |
|---|---|---|---|---|---|
| Instrument (1) | Market (2) | Major Participants (3) | Riskiness (4) | Original Maturity (5) | Interest Rate on 2/5/08[a] (6) |
| U.S. Treasury bills | Money | Sold by U.S. Treasury to finance federal expenditures | Default-free, close to riskless | 91 days to 1 year | 2.23% |
| Bankers' acceptances | Money | A firm's note, but one guaranteed by a bank | Low degree of risk if guaranteed by a strong bank | Up to 180 days | 3.11% |
| Dealer commercial paper | Money | Issued by financially secure firms to large investors | Low default risk | Up to 270 days | 3.05% |
| 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 | 3.10% |
| 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) | 2.84% |
| Eurodollar market time deposits | Money | Issued by banks outside the United States | Default risk depends on the strength of the issuing bank | Up to 1 year | 3.10% |
| Consumer credit, including credit card debt | Money | Issued by banks, credit unions, and 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; hence, there is some risk | 2 to 30 years | 1.919% on 2-year to 4.327% on 30-year bonds |
| Mortgages | Capital | Loans to individuals and businesses secured by real estate; bought by banks and other institutions | Risk is variable; risk is high in the case of subprime loans | Up to 30 years | 5.14% adjustable 5-year rate, 5.62% 30-year fixed rate |
| State and local government bonds | Capital | Issued by state and local governments; held by individuals and institutional investors | Riskier than U.S. government securities but exempt from most taxes | Up to 30 years | 4.63% to 5.03% for A-rated, 20- to 40-year bonds |
| Corporate bonds | Capital | Issued by corporations; held by individuals and institutional investors | Riskier than U.S. government securities but less risky than preferred and common stocks; varying degree of risk within bonds depends on strength of issuer | Up to 40 years[b] | 5.38% on AAA bonds, 6.63% on BBB bonds |
| Leases | Capital | Similar to debt in that firms can lease assets rather than borrow and then buy the assets | Risk similar to corporate bonds | Generally 3 to 20 years | Similar to bond yields |
| Preferred stocks | Capital | Issued by corporations to individuals and institutional investors | Generally riskier than corporate bonds but less risky than common stock | Unlimited | 5.5% to 9% |
| Common stocks[c] | Capital | Issued by corporations to individuals and institutional investors | Riskier than bonds and preferred stock; risk varies from company to company | Unlimited | NA |

[a]The yields reported are from the web site of *The Wall Street Journal* on February 5, 2008, http://online.wsj.com. Money market rates assume a 3-month maturity.
[b]A few corporations have issued 100-year bonds; however, the majority have issued bonds with maturities that are less than 40 years.
[c]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, historically, stock returns have averaged between 9% and 12% a year, but they can be much higher or lower in a given year. Of course, if you purchase a stock, your actual return may be considerably higher or lower than these historical averages.

around the world in response to changes in interest and exchange rates, and these movements can disrupt local institutions and economies. The subprime mortgage crisis discussed in the opening chapter vignette illustrates how problems in one country quickly affect the economies of other nations.

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

Another important trend in recent years has been the increased use of **derivatives**. A derivative is any security whose value is *derived* from the price of some other "underlying" asset. An option to buy IBM stock is a derivative, as is a contract to buy Japanese yen 6 months from now or a bond backed by subprime mortgages. The value of the IBM option depends on the price of IBM's stock, the value of the Japanese yen "future" depends on the exchange rate between yen and dollars, and the value of the bond depends on the value of the underlying mortgages. The market for derivatives has grown faster than any other market in recent years, providing investors with new opportunities, but also exposing them to new risks.

**Derivative**
*Any financial asset whose value is derived from the value of some other "underlying" asset.*

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

The values of most derivatives are subject to more volatility than the values of the underlying assets. For example, someone might pay $500 for an option to buy 100 shares of IBM stock at $120 per share when the stock is selling for $120. If the stock rose by $5 per share, a gain of 4.17% would result. However, the options would be worth somewhere between $25 and $30; so the percentage gain would be between 400% and 500%.[3] Of course, if IBM stayed at $120 or fell, the options would be worthless and the option purchaser would have a 100% loss. Many other derivatives have similar characteristics and are equally as risky or even more risky.

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

[3]For a discussion on options and option pricing, refer to Chapter 18 in this text.


Distinguish between physical asset markets and financial asset markets.

What's the difference between spot markets and futures markets?

Distinguish between money markets and capital markets.

What's the difference between primary markets and secondary markets?

Differentiate between private and public markets.

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

## 2-3 FINANCIAL INSTITUTIONS

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

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

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

1. **Investment banks** traditionally help companies raise capital. They (a) help corporations design securities with features that are currently attractive to investors, (b) buy these securities from the corporation, and (c) resell them to savers. Since the investment bank generally guarantees that the firm will raise the needed capital, the investment bankers are also called *underwriters*. The recent credit crisis has had a dramatic effect on the investment banking industry. Bear Stearns collapsed and was later acquired by J.P. Morgan, Lehman Brothers went bankrupt, and Merrill Lynch was forced to sell out to Bank of America. Moreover, the two "surviving" major investment banks (Morgan Stanley and Goldman Sachs) received Federal Reserve approval to become commercial bank holding companies. Their future remains uncertain.

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

2. **Commercial banks,** such as Bank of America, Citibank, Wells Fargo, Wachovia, and JPMorgan Chase, are the traditional "department stores of finance" because they serve a variety of savers and borrowers. Historically, commercial banks were the major institutions that handled checking accounts and through which the Federal Reserve System expanded or contracted the money supply. Today, however, several other institutions also provide checking services and significantly influence the money supply. Note, too, that the larger banks are generally part of financial services corporations as described next.[4]

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

3. **Financial services corporations** are large conglomerates that combine many different financial institutions within a single corporation. Most financial services corporations started in one area but have now diversified to cover most of the financial spectrum. For example, Citigroup owns Citibank (a commercial bank), Smith Barney (an investment bank and securities brokerage organization), insurance companies, and leasing companies.

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

4. *Credit unions* are cooperative associations whose members are supposed to have a common bond, such as being employees of the same firm. Members' savings are loaned only to other members, generally for auto purchases, home improvement loans, and home mortgages. Credit unions are often the cheapest source of funds available to individual borrowers.
5. *Pension funds* are retirement plans funded by corporations or government agencies for their workers and administered primarily by the trust departments of commercial banks or by life insurance companies. Pension funds invest primarily in bonds, stocks, mortgages, and real estate.
6. *Life insurance companies* take savings in the form of annual premiums; invest these funds in stocks, bonds, real estate, and mortgages; and make payments to the beneficiaries of the insured parties. In recent years, life insurance companies have also offered a variety of tax-deferred savings plans designed to provide benefits to participants when they retire.
7. **Mutual funds** are corporations that accept money from savers and then use these funds to buy stocks, long-term bonds, or short-term debt instruments issued by businesses or government units. These organizations pool funds and thus reduce risks by diversification. They also achieve economies of scale in analyzing securities, managing portfolios, and buying and selling securities. Different funds are designed to meet the objectives of different types of savers. Hence, there are bond funds for those who prefer safety, stock funds for savers who are willing to accept significant risks in the hope of higher returns, and still other funds that are used as interest-bearing 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 how 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.
8. *Exchange Traded Funds* (ETFs) are similar to regular mutual funds and are often operated by mutual fund companies. ETFs buy a portfolio of stocks of a certain type—for example, the S&P 500 or media companies or Chinese companies—and then sell their own shares to the public. ETF shares are generally traded in the public markets, so an investor who wants to invest in the Chinese market, for example, can buy shares in an ETF that holds stocks in that particular market.
9. *Hedge funds* are also similar to mutual funds because they accept money from savers and use the funds to buy various securities, but there are some important differences. While mutual funds (and ETFs) are registered and regulated by the Securities and Exchange Commission (SEC), hedge funds are largely unregulated. This difference in regulation stems from the fact that

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

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

mutual funds typically target small investors, whereas hedge funds typically have large minimum investments (often exceeding $1 million) and are marketed primarily to institutions and individuals with high net worths. Hedge funds received their name because they traditionally were used when an individual was trying to hedge risks. For example, a hedge fund manager who believes that interest rate differentials between corporate and Treasury bonds are too large might simultaneously buy a portfolio of corporate bonds and sell a portfolio of Treasury bonds. In this case, the portfolio would be "hedged" against overall movements in interest rates, but it would perform especially well if the spread between these securities were to narrow.

However, some hedge funds take on risks that are considerably higher than that of an average individual stock or mutual fund. For example, in 1998, Long-Term Capital Management (LTCM), a high-profile hedge fund whose managers included several well-respected practitioners as well as two Nobel Prize–winning professors who were experts in investment theory, made some incorrect assumptions and "blew up."[5] LTCM had many billions of dollars under management, and it owed large amounts of money to a number of banks. To avert a worldwide crisis, the Federal Reserve orchestrated a buyout of the firm by a group of New York banks.

As hedge funds have become more popular, many of them have begun to lower their minimum investment requirements. Perhaps not surprisingly, their rapid growth and shift toward smaller investors have also led to a call for more regulation.

**10.** *Private equity companies* are organizations that operate much like hedge funds; but rather than buying some of the stock of a firm, private equity players buy and then manage entire firms. Most of the money used to buy the target companies is borrowed. Recent examples include Cerberus Capital's buyout of Chrysler and private equity company JC Flowers' proposed $25 billion purchase of Sallie Mae, the largest student loan company. The Sallie Mae deal is in jeopardy—Flowers planned to borrow most of the money for the purchase, but the subprime situation has made borrowing more difficult and expensive. Flowers tried to back out of the deal, but Sallie Mae executives insisted that it complete the transaction or pay a $900 million "breakup fee."

With the exception of hedge funds and private equity companies, financial institutions are regulated to ensure the safety of these institutions and to protect investors. Historically, many of these regulations—which have included a prohibition on nationwide branch banking, restrictions on the types of assets the institutions could 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 the capital markets. Recognizing this fact, policy makers took several steps during the 1980s and 1990s to deregulate financial services companies. For example, the restriction barring nationwide branching by banks was eliminated in 1999.

Panel A of Table 2-2 lists the 10 largest U.S. bank holding companies, while Panel B shows the leading world banking companies. Among the world's 10 largest, only two (Citigroup and Bank of America) are 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 between different types of financial institutions.

[5]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.

## 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 $2.2 trillion (that's over two thousand billion!) worth of assets.

Citigroup resulted from three important trends:

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

Citigroup has grown, and it is now the largest financial institution in the world. But as the chapter opening vignette indicated, Citigroup has been hit hard by the mortgage debacle; and its chairperson, Charles Prince, recently lost his job. When you read this, you might access the Internet to find the extent to which Citigroup has been able to rebound from its recent difficulties.

**Table 2-2** Largest Banks and Underwriters

| Panel A<br>U.S. Bank Holding Companies[a] | Panel B<br>World Banking Companies[b] | Panel C<br>Leading Global Underwriters[c] |
|---|---|---|
| Citigroup Inc. | UBS AG (Zurich) | Citigroup Inc. |
| Bank of America Corp. | Barclays PLC (London) | JPMorgan |
| JPMorgan Chase & Co. | BNP Paribas (Paris) | Deutsche Bank AG |
| Wachovia Corp. | Citigroup Inc. (New York) | Merrill Lynch |
| Taunus Corp. | HSBC Holdings PLC (London) | Morgan Stanley |
| Wells Fargo & Co. | Royal Bank of Scotland Group PLC (Edinburgh) | Lehman Brothers |
| HSBC North America Holdings Inc. | Credit Agricole (Paris) | Goldman Sachs |
| U.S. Bancorp | Mitsubishi UFJ Financial Group (Tokyo) | Barclays Capital |
| Bank of New York, The Mellon Corp. | Deutsche Bank AG (Frankfurt) | UBS AG |
| SunTrust Banks, Inc. | Bank of America Corp. (Charlotte) | Credit Suisse |

*Notes:*

[a]Ranked by total assets as of December 31, 2007. *Source:* National Information Center, www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx.

[b]Ranked by total assets as of December 31, 2007. *Source:* Thomson One Banker.

[c]Ranked by dollar amount raised through new issues (stocks and bonds) in 2007. For this ranking, the lead underwriter (manager) is given credit for the entire issue. *Source:* Adapted from *The Wall Street Journal*, January 2, 2008, p. R18.


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

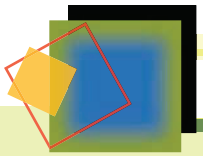
List the major types of financial institutions and briefly describe the primary function of each.

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

## 2-4 THE STOCK MARKET

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

There are a number of different stock markets. The two leaders are the New York Stock Exchange (NYSE) and the Nasdaq stock market. Stocks are traded using a variety of market procedures, but there are just two basic types: (1) *physical location exchanges*, which include the NYSE, the American Stock Exchange (AMEX), and several regional stock exchanges, and (2) *electronic dealer-based markets*, which include the Nasdaq, the less formal over-the-counter market, and the recently developed electronic communications networks (ECNs). (See the box entitled, "The NYSE and Nasdaq Go Global.") Because the physical location exchanges are easier to describe and understand, we discuss them first.



### GLOBAL PERSPECTIVES

### THE NYSE AND NASDAQ GO GLOBAL

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

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

These actions illustrate the growing importance of global trading, especially electronic trading. Indeed, many pundits have concluded that the floor traders who buy and sell stocks on the NYSE and other physical exchanges will soon become a thing of the past. That may or may not be true, but it is clear that stock trading will continue to undergo dramatic changes in the upcoming years.

To find a wealth of up-to-date information on the NYSE and Nasdaq, go to Google (or another search engine) and do NYSE history and Nasdaq history searches.

## 2-4a Physical Location Stock Exchanges

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

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

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 fifth largest brokerage firm) might receive an order from a customer wanting to sell shares of GE. Each broker communicates electronically with the firm's representative on the NYSE. Other brokers throughout the country are also communicating with their own exchange members. The exchange members with *sell orders* offer the shares for sale, and they are bid for by the members with *buy orders*. Thus, the exchanges operate as *auction markets*.[6]

## 2-4b Over-the-Counter (OTC) 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 was traditionally referred to as the **over-the-counter (OTC) market.** An explanation of the term *over-the-counter* will help clarify how this term arose. As noted earlier, the exchanges operate as auction markets—buy and sell orders come in more or less simultaneously, and exchange members match these orders. When a stock is traded infrequently, perhaps because the firm is new or small, few buy and sell orders come in and matching them within a reasonable amount of time is difficult. To avoid this problem, some brokerage firms maintain an inventory of such stocks and stand prepared to make a market for them. These "dealers" buy when individual investors want to sell, and they sell part of their inventory when investors want to buy. At one time, the inventory of securities was kept in a safe; and the stocks, when bought and sold, were literally passed over the counter.

**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.*

[6] The NYSE is actually a modified auction market wherein people (through their brokers) bid for stocks. Originally—in 1792—brokers would literally shout, "I have 100 shares of Erie for sale; how much am I offered?" and then sell to the highest bidder. If a broker had a buy order, he or she would shout, "I want to buy 100 shares of Erie; who'll sell at the best price?" The same general situation still exists, although the exchanges now have members known as *specialists* who facilitate the trading process by keeping an inventory of shares of the stocks in which they specialize. If a buy order comes in at a time when no sell order arrives, the specialist will sell 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 *ask price* (the price at which shares will be sold out of inventory). The bid and ask prices are set at levels designed to keep the inventory in balance. If many buy orders start coming in because of favorable developments or many sell orders come in because of unfavorable events, the specialist will raise or lower prices to keep supply and demand in balance. Bid prices are somewhat lower than ask prices, with the difference, or *spread*, representing the specialist's profit margin.

Special facilities are available to help institutional investors such as mutual or pension funds sell large blocks of stock without depressing their prices. In essence, brokerage houses that cater to institutional clients will purchase blocks (defined as 10,000 or more shares) and then resell the stock to other institutions or individuals. Also, when a firm has a major announcement that is likely to cause its stock price to change sharply, it will ask the exchange to halt trading in its stock until the announcement has been made and the resulting information has been digested by investors.

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

Today these markets are often referred to as **dealer markets.** A dealer market includes all facilities that are needed to conduct security transactions, but the transactions are not made on the physical location exchanges. The dealer market system consists of (1) the relatively few *dealers* who hold inventories of these securities and who are said to "make a market" in these securities; (2) the thousands of brokers who act as *agents* in bringing the dealers together with investors; and (3) the computers, terminals, and electronic networks that provide a communication link between dealers and brokers. The dealers who make a market in a particular stock quote the price at which they will pay for the stock (the *bid price*) and the price at which they will sell shares (the *ask price*). Each dealer's prices, which are adjusted as supply and demand conditions change, can be seen on computer screens across the world. The *bid-ask spread,* which is the difference between bid and ask prices, represents the dealer's markup, or profit. The dealer's risk increases when the stock is more volatile or when the stock trades infrequently. Generally, we would expect volatile, infrequently traded stocks to have wider spreads in order to compensate the dealers for assuming the risk of holding them in inventory.

Brokers and dealers who participate in the OTC market are members of a self-regulatory body known as the *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. As noted earlier, the Nasdaq has invested in the London Stock Exchange and other market makers, while the NYSE merged with Euronext. 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. However, reported volume (number of shares traded) is often larger on Nasdaq, and more companies are listed on Nasdaq.[7]

Interestingly, many high-tech companies such as Microsoft, Google, and Intel have remained on Nasdaq even though they meet the listing requirements of the NYSE. At the same time, however, other high-tech companies have left Nasdaq for the NYSE. Despite these defections, Nasdaq's growth over the past decade has been impressive. In the years ahead, competition between Nasdaq and NYSE Euronext 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?

## 2-5 THE MARKET FOR COMMON STOCK

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

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

[7]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.

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% of all publicly held common stocks. Included are pension plans (26%), mutual funds (10%), foreign investors (6%), insurance companies (3%), and brokerage firms (1%). However, because these institutions buy and sell relatively actively, they account for about 75% of all transactions. Thus, institutional investors have a significant influence on the prices of individual stocks.

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

## 2-5a Types of Stock Market Transactions

We can classify stock market transactions into three distinct categories:

1. *Outstanding shares of established publicly owned companies that are traded: the secondary market*. Allied Food Products, the company we will study in Chapters 3 and 4, has 50 million shares of stock outstanding. If the owner of 100 shares sells his or her stock, the trade is said to have occurred in the *secondary market*. Thus, the market for outstanding shares, or *used shares*, is the secondary market. The company receives no new money when sales occur in this market.
2. *Additional shares sold by established publicly owned companies: the primary market*. If Allied Food decides to sell (or issue) an additional 1 million shares to raise new equity capital, this transaction is said to occur in the *primary market*.[8]
3. *Initial public offerings made 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 February 2008, the stock was selling for $495, so it had increased by over 480%. In 2006, McDonald's owned Chipotle Mexican Grill. McDonald's then sold its shares to the public for about $47.50 to raise capital to support its core business; and by February 2008, Chipotle's stock price was $117. Making these types of offerings is called **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**.[9]

**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.*

The number of new IPOs rises and falls with the stock market. When the market is strong, many companies go public to bring in new capital and to give their founders an opportunity to cash out some of their shares. Table 2-3 lists the largest, the best performing, and the worst performing IPOs of 2007 and shows how they performed from their offering dates through year-end 2007. As the table shows, not all IPOs are as well received as Google and Chipotle. 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 often *oversubscribed*, which means that the demand for shares at the offering price exceeds the number of shares issued. In such instances, investment bankers favor large institutional investors (who are their best customers); and small investors find it hard, if not impossible, to get in on the ground floor. They can buy the stock in the aftermarket; but evidence suggests

[8]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.

[9]A number of years ago Coors, the beer company, offered some of its shares to the public. These shares were designated Class B, and they were nonvoting. The Coors family retained the founders' shares, called Class A stock, which carried full voting privileges. This illustrates how the managers of a company can use different classes of shares to maintain control. However, the nonvoting shares always sell for less than the voting shares, so using nonvoting shares does not maximize the value of the firm.

**Table 2-3** Initial Public Offerings in 2007

**THE BIGGEST IPOs**

| Issuer | Issue Date | U.S. Proceeds (Millions) | PERCENT CHANGE FROM OFFER: First-Day Trading | PERCENT CHANGE FROM OFFER: Through 12/31/07 |
|---|---|---|---|---|
| Blackstone | 06/21/07 | $4,753.3 | +13.1% | –28.6% |
| MF Global | 07/18/07 | 2,921.4 | –8.2 | +4.9 |
| MetroPCS Communications | 04/18/07 | 1,322.5 | +19.1 | –15.4 |
| Cosan | 08/16/07 | 1,172.7 | unch. | +20.0 |
| Och-Ziff Capital Management Group | 11/13/07 | 1,152.0 | –4.2 | –17.9 |
| VMware | 08/13/07 | 1,100.6 | +75.9 | +193.1 |
| Giant Interactive Group | 10/31/07 | 1,019.5 | +17.6 | –16.3 |
| National CineMedia | 02/07/07 | 882.0 | +22.2 | +20.0 |
| AECOM Technology | 05/09/07 | 808.5 | +5.5 | +42.9 |
| Energy Solutions | 11/14/07 | 765.9 | +0.04 | +17.3 |

**THE BEST PERFORMERS**

| Issuer | Issue Date | Offer Price | U.S. Proceeds (Millions) | PERCENT CHANGE FROM OFFER: First-Day Trading | PERCENT CHANGE FROM OFFER: Through 12/31/07 |
|---|---|---|---|---|---|
| JA Solar Holdings | 02/06/07 | $15.00 | $ 258.8 | +18.7% | +365.4% |
| MercadoLibre | 08/09/07 | 18.00 | 332.8 | +58.3 | +310.4 |
| Yingli Green Energy Holding | 06/07/07 | 11.00 | 324.5 | –4.6 | +251.8 |
| VMware | 08/13/07 | 29.00 | 1,100.6 | +75.9 | +193.1 |
| Lululemon Athletica | 07/26/07 | 18.00 | 376.7 | +55.6 | +163.2 |
| Masimo | 08/07/07 | 17.00 | 233.0 | +22.9 | +132.1 |
| MSCI | 11/14/07 | 18.00 | 289.8 | +38.7 | +113.3 |
| American Public Education | 11/08/07 | 20.00 | 107.8 | +79.6 | +108.9 |
| WuXi PharmaTech (Cayman) | 08/08/07 | 14.00 | 212.3 | +40.0 | +108.9 |
| Dolan Media | 08/01/07 | 14.50 | 224.4 | +22.2 | +101.2 |

**THE WORST PERFORMERS**

| Issuer | Issue Date | Offer Price | U.S. Proceeds (Millions) | PERCENT CHANGE FROM OFFER: First-Day Trading | PERCENT CHANGE FROM OFFER: Through 12/31/07 |
|---|---|---|---|---|---|
| Superior Offshore International | 04/19/07 | $15.00 | $175.4 | +16.9% | –66.5% |
| VeriChip | 02/09/07 | 6.50 | 20.2 | unch. | –65.4 |
| ImaRx Therapeutics | 07/25/07 | 5.00 | 15.0 | –4.2 | –61.4 |
| BigBand Networks | 03/14/07 | 13.00 | 160.0 | +30.8 | –60.5 |
| Meruelo Maddux Properties | 01/24/07 | 10.00 | 455.5 | +6.0 | –60.0 |
| HFF | 01/30/07 | 18.00 | 296.0 | +3.9 | –57.0 |
| Glu Mobile | 03/21/07 | 11.50 | 86.2 | +6.9 | –54.6 |
| Limelight Networks | 06/07/07 | 15.00 | 276.0 | +47.9 | –54.1 |
| Xinhua Finance Media | 03/08/07 | 13.00 | 300.0 | –12.7 | –53.8 |
| GSI Technology | 03/29/07 | 5.50 | 35.4 | –3.8 | –53.6 |

*Source:* Lynn Cowan, "IPOs Tally Record Amount of Cash," *The Wall Street Journal*, January 2, 2008, p. R10.

that when an investor does not get in on the ground floor, IPOs often underperform the overall market over the long run.[10]

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

It is important to recognize that firms can go public without raising any additional capital. For example, the Ford Motor Company was once owned exclusively by the Ford family. When Henry Ford died, he left a substantial part of his stock to the Ford Foundation. When the Foundation later sold some of the stock to the general public, the Ford Motor Company went public, even though the company itself raised no capital in the transaction.


Differentiate between closely held and publicly owned corporations.

Differentiate between primary and secondary markets.

What is an IPO?

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

## 2-6 STOCK MARKETS AND RETURNS

Anyone who has invested in the stock market knows that there can be (and generally are) large differences between *expected* and *realized* prices and returns. Figure 2-2 shows how total realized portfolio returns have varied from year to year. As logic would suggest (and as is demonstrated in Chapter 8), a stock's expected return as estimated by investors at the margin is always positive; otherwise, investors would not buy the stock. However, as Figure 2-2 shows, in some years, actual returns are negative.

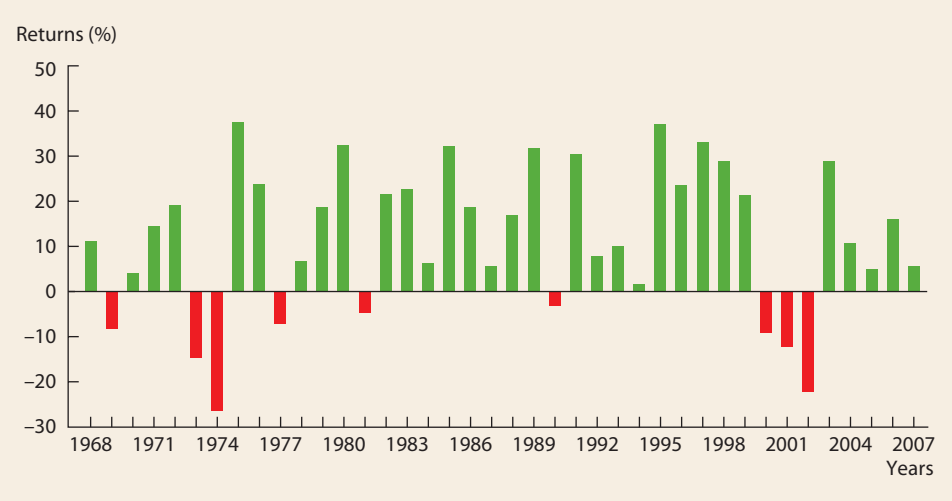
### 2-6a Stock Market Reporting

Up until a few years ago, the best source of stock quotations was the business section of daily newspapers such as *The Wall Street Journal*. One problem with newspapers, however, is that they report yesterday's prices. Now it is possible to obtain real-time quotes throughout the day from a wide variety of Internet sources.[11] One of the best is Yahoo!, and Figure 2-3 shows a detailed quote for GlaxoSmithKline PLC (GSK). As the heading shows, GlaxoSmithKline is traded on the NYSE 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 had last traded at $45.89 and that the stock had traded thus far on this day from as low as $45.42 to as high as $46.23. (Note that the price is reported in decimals rather than fractions, reflecting a recent change in trading conventions.) The last trade

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

[11]Most free sources provide quotes that are delayed 15 minutes. Real-time quotes can be obtained for a fee.

**FIGURE 2-2** S&P 500 Index, Total Returns: Dividend Yield + Capital Gain or Loss, 1968–2007

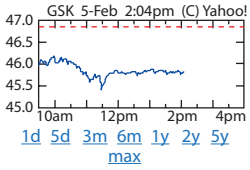



*Source:* Data taken from various issues of *The Wall Street Journal* "Investment Scoreboard" section.

**FIGURE 2-3** Stock Quote for GlaxoSmithKline, February 5, 2008

**GLAXOSMITHKLINE PLC** (NYSE:GSK) Edit

| | | | |
|---|---|---|---|
| Last Trade: | **45.89** | Day's Range: | 45.42 - 46.23 |
| Trade Time: | 2.20PM ET | 52wk Range: | 45.89 - 59.98 |
| Change: | ⬇ 0.98 (2.09%) | Volume: | 1,835,434 |
| Prev Close: | 46.87 | Avg Vol (3m): | 1,968,960 |
| Open: | 46.07 | Market Cap: | 125.39B |
| Bid: | N/A | P/E (ttm): | 12.30 |
| Ask: | N/A | EPS (ttm): | 3.73 |
| 1y Target Est: | 56.10 | Div & Yield: | 2.13 (4.50%) |




Annual Report for GSK

Add Quotes to Your Web Site  Add GSK to Portfolio  Set Alert  Download Data

*Source:* http://finance.yahoo.com.

shown was at 2:20 p.m. ET on February 5, 2008; and its price range during the past 52 weeks was between $45.89 and $59.98.

The next three lines show that GSK opened trading on February 5 at $46.07, that it closed on February 4 at $46.87, and that its price fell by $0.98 (or a 2.09% decrease) from the previous close to the current price. So far during the day, 1,835,434 shares had traded hands. GSK's average daily trading volume (based on the past three months) was 1,968,960 shares, so trading so far that day was close to the average. The total value of all of GSK's stock, called its market cap, was $125.39 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) was 12.30, and its earnings per share for the most recent 12 months was $3.73 (*ttm* stands for "trailing 12 months"—in other words, the

## Measuring the Market

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

### Dow Jones Industrial Average

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

### S&P 500 Index

Created in 1926, the S&P 500 Index is widely regarded as the standard for measuring large-cap U.S. stock market performance. The stocks in the S&P 500 are selected by the Standard & Poor's Index Committee, and they are the leading companies in the leading industries. It is weighted by each stock's market value, so the largest companies have the greatest influence. The S&P 500 is used for benchmarking by 97% of all U.S. money managers and pension plan sponsors, and approximately $700 billion is held in index funds designed to mirror the same performance of the index.

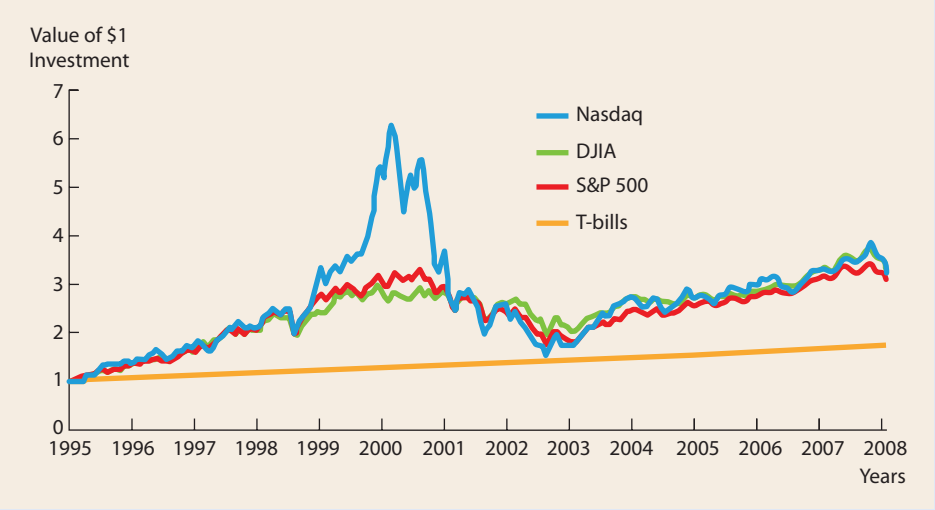
### Nasdaq Composite Index

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

### Recent Performance

The accompanying figure plots the value that an investor would now have if he or she had invested $1 in each of the three indexes on January 1, 1995. The returns on the three indexes are compared with an investment strategy that invests only in 1-year T-bills. Each of these indexes performed quite well through 1999. However, for a couple of years, each index stumbled before beginning to rebound again in 2003. During the last 13 years, the average annualized returns of these indexes ranged from 8.8% for the S&P 500 to 9.6% for the Dow. 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**



most recent 12 months). The mean of the analysts' one-year target price for GSK was $56.10. GSK's dividend was $2.13 per share, so the quarterly dividend was $0.5325 per share; and the dividend yield, which is the annual dividend divided by the previous closing price, is 4.50%.

In Figure 2-3, the chart to the right plots the stock price during the day; however, the links below the chart allow you to pick different time intervals for plotting data. As you can see, Yahoo! provides a great deal of information in its detailed quote; and even more detail is available on the screen page below the basic quote information.

### 2-6b Stock Market Returns

In Chapters 8 and 9, we will discuss in detail how a stock's rate of return is calculated, what the connection is between risk and returns, and what techniques analysts use to value stocks. However, it is useful at this point to give you a rough idea of how stocks have performed in recent years. Figure 2-2 shows how the returns on large U.S. stocks have varied over the past years, and the box entitled "Measuring the Market" provides information on the major U.S. stock market indices and their performances since the mid-1990s.

The market trend has been strongly up since 1968, but by no means does it go up every year. Indeed, as we can see from Figure 2-2, the overall market was down in 9 of the 40 years, including the three consecutive years of 2000–2002. The stock prices of individual companies have likewise gone up and down.[12] Of course, even in bad years, some individual companies do well; so "the name of the game" in security analysis is to pick the winners. Financial managers attempt to do this, but they don't always succeed. In subsequent chapters, we will examine the decisions managers make to increase the odds that their firms will perform well in the marketplace.


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

If we constructed a chart like Figure 2-2 for an average S&P 500 stock, do you think it would show more or less volatility? Explain.

## 2-7 STOCK MARKET EFFICIENCY

To begin this section, consider the following definitions:

*Market price:* The current price of a stock. For example, the Internet showed that on one day, GSK's stock traded at $45.89. The market price had varied from $45.42 to $46.23 during that same day as buy and sell orders came in.

*Intrinsic value:* The price at which the stock would sell if all investors had all knowable information about a stock. This concept was discussed in Chapter 1, where we saw that a stock's intrinsic value is based on its expected future cash flows and its risk. Moreover, the market price tends to fluctuate around the

[12]If we constructed a graph like Figure 2-2 for individual stocks rather than for the index, far greater variability would be shown. Also, if we constructed a graph like Figure 2-2 for bonds, it would have similar ups and downs, but the bars would be far smaller, indicating that gains and losses on bonds are generally much smaller than those on stocks. Above-average bond returns occur in years when interest rates decline, losses occur when interest rates rise sharply, but interest payments tend to stabilize bonds' total returns. We will discuss bonds in detail in Chapter 7.

intrinsic value; and the intrinsic value changes over time as the company succeeds or fails with new projects, competitors enter or exit the market, and so forth. We can guess (or estimate) GSK's intrinsic value, but different analysts will reach somewhat different conclusions.

*Equilibrium price:* The price that balances buy and sell orders at any given time. When a stock is in equilibrium, the price remains relatively stable until new information becomes available and causes the price to change. For example, GSK's equilibrium price appears to be about $45.89, as it has been fluctuating narrowly around this amount.

*Efficient market:* A market in which prices are close to intrinsic values and stocks seem to be in equilibrium.

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

Academics and financial professionals have studied the issue of market efficiency extensively.[13] As generally happens, some people think that markets are highly efficient, others think that markets are highly inefficient, and others think that the issue is too complex for a simple answer.

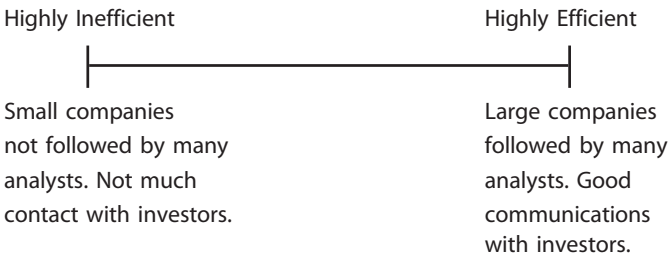
Those who believe that markets are efficient note that there are 100,000 or so full-time, highly trained professional analysts and traders operating in the market. Many have PhDs in physics, chemistry, and other technical fields in addition to advanced degrees in finance. Moreover, there are fewer than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

However, other people point to data that suggests that markets are not very efficient. For example, on October 15, 1987, the S&P 500 lost 25% of its value. Many of the largest U.S. companies did worse, watching their prices get cut in half. In 2000, Internet stocks rose to phenomenally high prices, then fell to zero or close to it the following year. No truly important news was announced that could have caused either of these changes; and if the market was efficient, it's hard to see how such drastic changes could have occurred. Another situation that causes people to question market efficiency is the apparent ability of some analysts to consistently outperform the market over long periods. Warren Buffett comes to mind, but there are others. If markets are truly efficient, then each stock's price

[13]The general name for these studies is the efficient markets hypothesis, or EMH. It was, and still is, a hypothesis that needs to be proved or disproved empirically. In the literature, researchers identified three levels of efficiency: *weak form*, which contends that information on past stock price movements cannot be used to predict future stock prices; *semi-strong form*, which contends that all publicly available information is immediately incorporated into stock prices (i.e., that one cannot analyze published reports and then beat the market); and *strong form*, which contends that even company insiders, with inside information, cannot earn abnormally high returns. Few people believe the strong form today, as a number of insiders have made large profits, been caught (it's illegal to trade on inside information), and gone to jail. Martha Stewart is one, and she helped disprove the strong form of the EMH.

should be close to its intrinsic value. That would make it hard for any analyst to consistently pick stocks that outperform the market.

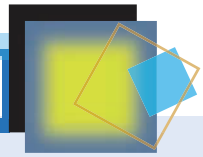
The following diagram sums up where most observers seem to be today. There is an "efficiency continuum," with the market for some companies' stocks being highly efficient and the market for other stocks being highly inefficient. The key factor is the size of the company—the larger the firm, the more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




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

Thus far we have been discussing the market for individual stocks. There is also a market for entire companies, where other companies, private equity groups, and large investors like Warren Buffett buy the entire company or a controlling stake in it. Suppose, for example, that Company X is in equilibrium, selling at a price that is close to its intrinsic value but where the intrinsic value is based on it being operated by its current managers, who own 51% of the stock. However, suppose that astute analysts study the company and conclude that it could produce much higher earnings and cash flows under a different management team or if it were combined with some other company or if it were broken up into a number of separate pieces. In this case, the stock might be thought of as trading in an efficient market while the company as a whole was not efficiently priced.

Some years ago, quite a few companies were inefficiently priced. But then along comes Warren Buffett, the private equity players, and hedge fund managers who are willing to contest entrenched managers. For example, Dow Jones, the owner of *The Wall Street Journal,* was controlled by its founding family, the Bancrofts. Dow Jones's stock lagged the market for years. Then Rupert Murdoch, who controls News Corporation, arguably the largest media company in the world, offered $60 per share for Dow Jones, which was then selling for about $35 per share. Murdoch planned to change *The Wall Street Journal* and combine its content with his Fox News and new financial channel. To Murdoch, Dow Jones' intrinsic value was $60. Without him or someone else who would operate the company differently, the intrinsic value was about $35. One could, of course, argue that Dow Jones' intrinsic value was $60 all along; but it was hard to know that until Murdoch came along and made his offer. Alternatively, one could argue that Murdoch raised the intrinsic value from $35 to $60. Finally, you can bet that many analysts on Wall Street are looking for the next Dow Jones. If they succeed, they will surely beat the market!



## 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, asset prices are about equal to their intrinsic values. The logic behind the EMH is straightforward. If a stock's price is "too low," rational traders will quickly take advantage of this opportunity and buy the stock, pushing prices up to the proper level. Likewise, if prices are "too high," rational traders will sell the stock, pushing the price down to its equilibrium level. Proponents of the EMH argue that these forces keep prices from being systematically wrong.

While the logic behind the EMH is compelling, many events in the real world seem inconsistent with the hypothesis, which has spurred a growing field called *behavioral finance*. Rather than assuming that investors are rational, behavioral finance theorists borrow insights from psychology to better understand how irrational behavior can be sustained over time. Pioneers in this field include psychologists Daniel Kahneman, Amos Tversky, and Richard Thaler. Their work has encouraged a growing number of scholars to work in this promising area of research.[14]

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

The second point deals with why mispricings can occur in the first place. Here insights from psychology come into play. For example, Kahneman and Tversky suggested that individuals view potential losses and gains differently. If you ask average individuals whether they would rather have $500 with certainty or flip a fair coin and receive $1,000 if a head comes up and nothing if a tail comes up, most would prefer the certain $500, which suggests an aversion to risk. However, if you ask people whether they would rather pay $500 with certainty or flip a coin and pay $1,000 if it's a head and nothing if it's a tail, most would indicate that they prefer to flip the coin. Other studies suggest that people's willingness to take a gamble depends on recent performance. Gamblers who are ahead tend to take on more 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 invest their money in the market even as prices went ever higher. Other evidence suggests that individuals tend to overestimate their true abilities. For example, a large majority (upward of 90% in some studies) of people believe that they have above-average driving ability and above-average ability to get along with others. Barberis and Thaler point out that:

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

Behavioral finance has been studied in both the corporate finance and investments areas. Ulrike Malmendier of Stanford and Geoffrey Tate of Wharton found that overconfidence leads managers to overestimate their ability and thus the profitability of their projects. 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.

[14]Three noteworthy sources for students interested in behavioral finance are Richard H. Thaler, Editor, *Advances in Behavioral Finance* (New York: Russell Sage Foundation, 1993); Hersh Shefrin, "Behavioral Corporate Finance," *Journal of Applied Corporate Finance,* Vol. 14.3, Fall 2001, pp. 113–125; 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: The Time-Tested Strategy for Successful Investing,* 9th ed., (New York: W.W. Norton & Company, 2007).

### 2-7a Conclusions about Market Efficiency

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

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


What does it mean for a market to be "efficient"?

Is the market for all stocks equally efficient? Explain.

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

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

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

## TYING IT ALL TOGETHER

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