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HERBERT B. MAYO

INVESTMENTS

AN INTRODUCTION

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Herbert B. Mayo

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Dedication

For Dylan and Holly
who bring joy to my life

For Margaret Trejo
whose valuable help over many
editions is so appreciated

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Preface

Many individuals find investments to be fascinating because they can actively participate in the decision-making process and see the results of their choices. Of course, not all investments will be profitable because you will not always make correct investment decisions. In addition, there is the thrill from a major success, along with the agony associated with the stock that dramatically rose after you sold or did not buy. Both the big fish you catch and the big fish that got away can make wonderful stories.

Investing, of course, is not a game but a serious subject that can have a major impact on your future well-being. Virtually everyone makes investments. Even if the individual does not select specific assets such as the stock of AT&T or federal government bonds, investments are still made through participation in pension plans and employee savings programs or through the purchase of whole-life insurance or a home. Each of these investments has common characteristics, such as the potential return and the risk you must bear. The future is uncertain, and you must determine how much risk you are willing to bear, since a higher return is associated with accepting more risk.

You may find investing daunting because of specialized jargon or having to work with sophisticated professionals. A primary aim of this textbook is to make investing less difficult by explaining the terms, by elucidating the possible alternatives, and by discussing many of the techniques professionals use to value assets and to construct portfolios. Although this textbook cannot show you a shortcut to financial wealth, it can reduce your chances of making uninformed investment decisions.

This textbook uses a substantial number of examples and illustrations employing data that are generally available to the investing public. This information is believed to be accurate; however, you should not assume that mention of a specific firm and its securities is a recommendation to buy or sell those securities. The examples have been chosen to illustrate specific points, not to pass judgment on individual investments.

Many textbooks on investments are written for students with considerable background in accounting, finance, and economics. Not every student who takes a course in investments has such a background. These students cannot cope with (or be expected to cope with) the material in advanced textbooks on investments. *Investments: An Introduction* is directed at these students and covers investments from descriptive material to the theory of portfolio construction and efficient markets. Some of the concepts (e.g., portfolio theory) and some of the investment alternatives (e.g., derivatives) are difficult to understand. There is no shortcut to learning this material, but this text does assume that you have a desire to tackle a fascinating subject and to devote real energy to the learning process.

THE STRUCTURE OF *INVESTMENTS: AN INTRODUCTION*

The initial concept for *Investments: An Introduction* was a text with many short chapters. However, over time many instructors requested coverage of more topics, and I concluded that some of the explanations needed to be expanded. The result was that the text grew in size, but the basic approach never changed.

Part 1, Chapters 1 through 5, is devoted to the investment process and fundamental financial concepts such as the time value of money and the measurement of risk. Part 2, Chapters 6 and 7, covers investment companies. References to investment companies such as exchange-traded funds occur throughout the text. Part 3, Chapters 8 through 12, is devoted to investing in stock, while Part 4, Chapters 13 through 16, is devoted to fixed-income securities. Chapters 17 through 19 (Part 5) cover those fascinating speculative and financial assets referred to as derivatives. The text ends with one chapter (Part 6) that serves as a summing up of the process of financial planning, the management of risk, and the role of the individual's belief in the efficiency of financial markets.

CHANGES FROM THE PREVIOUS EDITION

This edition essentially continues the educational process used in prior editions. The changes emphasize clarification and updates such as a refinement of the discussion of risk reduction through diversification in Chapter 5 and an updated discussion of the aftermath of the Great Recession of 2007–2009 in Chapter 10. Emphasis is placed on illustrations when updating is appropriate, such as changes in the tax code stemming from the Tax Cuts and Jobs Act (TCJA). In other cases, however, illustrations are not changed when they emphasize a specific point that is independent of time. Most footnotes have been integrated into the text because students told me that they do *not* read the footnotes.

PEDAGOGICAL FEATURES

In addition to the "Relationships" and "Fundamental Worked Problems," this textbook has a variety of features designed to assist the individual in the learning process. Chapters begin with a set of learning objectives that emphasize topics to be covered as the chapter develops. Terms to remember are defined in the marginal glossary entry that appears as each term is introduced. Chapters also include questions and, where appropriate, problems. The questions and problems are straightforward and designed to review and apply the material in the chapter. Answers to selected problems are provided in Appendix B.

Most of the chapters have short cases. These are not cases in the general usage of the term, in which a situation is presented and the student is required to determine the appropriate questions and formulate an answer or strategy. Instead, the cases are essentially problems that are cast in real-world situations. Their primary

purpose is to illustrate how the material may apply in the context of real investment decisions.

Many instructors have students construct a paper portfolio. A project, referred to as "Investment Assignment," is included. It is essentially a buy-and-hold strategy, and as the semester proceeds more parts are added to the assignment.

POSSIBLE ORGANIZATIONS OF INVESTMENT COURSES

This textbook has 20 chapters, but few instructors are able to complete the entire book in a semester course. Many of the chapters are self-contained units, so individual chapters may be omitted (or transposed) without loss of continuity. There are, however, exceptions. For example, the pricing of bonds uses the material on the time value of money. The valuation of common stock employs statistical concepts covered in the chapter on risk.

Individual course coverage also depends on the background of the students or how much they have retained from prior courses. Time value of money (Chapter 3), measurement of risk (Chapter 5), and the analysis of financial statements in Chapter 8 may have been covered in other finance or accounting courses. These chapters may be quickly reviewed or omitted. Other chapters are not easily omitted. Securities markets (Chapter 2), the analysis, valuation, and selection of common stock (Part 3), and fixed-income securities (Chapters 13 and 14) are the backbone of investments and need to be covered. Since investment companies (Part 2) have become such a large part of savings programs such as retirement plans, they should also be included in an introduction to investments.

The remaining chapters offer individual instructors considerable choice. My preference is to include an introduction to options (Chapter 17), which many students find both difficult and exciting. I also have a personal bias toward the material on financial planning and taxation, since I believe they play an important role in portfolio construction and asset selection.

SUPPLEMENTARY MATERIALS

A number of supplements are included in the Investments package and are available to instructors and students using the textbook.

Instructor's Manual and Test Bank (found on the Instructor's companion website)

The Instructor's Manual includes points to consider when answering the questions as well as complete solutions to the problems. In addition, suggestions are given for using the Investment Assignment feature in the classroom and teaching notes are provided for the cases. The Test Bank section of the manual includes approximately 1,000 true/false and multiple-choice questions. It is available on the text website in Word and several LMS formats. The Test Bank can also be found in Cognero.

Cognero™ Testing Software

Cengage Learning Testing Powered by Cognero™ is a flexible, online system that allows you to author, edit, and manage test bank content from multiple Cengage Learning solutions; create multiple test versions in an instant; deliver tests from your LMS, your classroom, or wherever you want.

PowerPoint™ Slides

These are available on the website for use by instructors for enhancing their lectures. These slides bring out the most important points in the chapter. They also include important charts and graphs from the text, which will aid students in the comprehension of significant concepts.

Website

The support website for *Investments: An Introduction,* Thirteenth Edition (**www.cengage.com**) includes the following features:

- About the Product
- Instructor's Manual
- Test Bank
- PowerPoint Slides

ACKNOWLEDGMENTS

A textbook requires the input and assistance of many individuals. Over the years, my publisher has provided a variety of reviews from individuals who sincerely offered suggestions. Unfortunately, suggestions from different reviewers are sometimes contradictory. Since I cannot please all the reviewers at the same time, I trust that individuals whose advice was not or could not be taken will not be offended.

At this point, it is traditional for the author to thank members of the editorial and production staff for their help in bringing the book to fruition. I wish to thank Aaron Arnsparger, Christopher Valentine, and Troy Adair.

These individuals deserve warm thanks for their efforts toward facilitating the completion of this text.

The Investment Process and Financial Concepts

PART 1

Investing is a process by which individuals construct a portfolio of assets designed to meet specified financial goals. Specific objectives range from financing retirement or paying for a child's education to starting a business and having funds to meet financial emergencies. The specification of financial goals is important, for they help determine the appropriateness of the assets acquired for the portfolio.

Part 1 of this text covers the mechanics of buying and selling financial assets, the legal and tax environment in which investment decisions are made, and crucial financial concepts that apply to asset allocation and portfolio management. Chapter 1 introduces important definitions and concepts that appear throughout the text. Chapter 2 is devoted to the mechanics of investing. These include the process by which securities are issued and subsequently bought and sold. Next follows one of the most important concepts in finance, the time value of money (Chapter 3). All investments are made in the present but returns occur in the future. Linking the future and the present is the essence of the time value of money.

Chapter 4 combines several disparate topics. It begins with financial planning and the importance of asset allocation. However, you execute your financial plan in a world of taxation and efficient financial markets. Tax rates differ on long-term and short-term capital gains; some investments defer tax obligations and others avoid taxation. These differences in taxation affect the amount of your return that you *get to keep*. In addition, some facet of the tax law changes each year, complicating investment decision making and affecting investment strategy.

Since the future is not known, all investments involve risk. Chapter 5 is devoted to sources of risk, how risk may be measured, and how it may be managed. The allocation of your assets and the construction of a diversified portfolio may be the most important financial concept you must face. Failure to diversify subjects the investor to additional risk without generating additional return. Your objective should be to construct a portfolio that maximizes your return for a given level of risk. Of course, this requires that you determine how much risk you are willing to bear. Individuals with different financial resources and disparate financial goals may be willing to accept different levels of risk, but in each case the goal is to maximize the return for the amount of risk the investor bears.

One final caveat before you start Part 1. Chapter 4 introduces the concept that investments are made in exceedingly competitive markets. Rapid dissemination of information and stiff competition among investors

produce efficient markets. Efficient markets imply that you cannot expect to earn abnormally high returns over an extended period of time. Although you may outperform the market, such performance on a consistent basis is rare. Perhaps you will do exceptionally well, but then there is also the chance of doing exceptionally poorly. The emphasis in this text will be not how to outperform but how to use financial assets to meet financial goals. That is, you should emphasize constructing a diversified portfolio that meets your financial objectives and earns a return that compensates you for the risk you take.

An Introduction to Investments

CHAPTER 1

LEARNING OBJECTIVES

After completing this chapter you should be able to:

1. Explain why individuals should specify investment goals.
2. Distinguish between primary and secondary markets, risk and speculation, liquidity, and marketability.
3. Identify the sources of risk and the sources of return.
4. Differentiate between efficient and inefficient markets.

In 1986, Microsoft first sold its stock to the general public. Within 10 years, the stock's value had increased by over 5,000 percent. A $10,000 investment was worth over $500,000. In the same year, Worlds of Wonder also sold its stock to the public. Ten years later, the company was defunct. A $10,000 investment was worth nothing. These are two examples of emerging firms that could do well or could fail. Would investing in large, well-established companies generate more consistent returns? The answer depends, of course, on which stocks were purchased and when. In 1972, Xerox stock reached a high of $171.87 a share. The price subsequently declined and currently languishes way below that historic high.

Today the investment environment is even more dynamic. World events can rapidly alter the values of specific assets. There are so many assets from which to choose. The amount of information available to investors is staggering and grows continually. The accessibility of personal computers and the dissemination of information on the Internet increase an individual's ability to track investments and to perform investment analysis. Furthermore, the recessions of 1990–1991 and 2008–2009, the large decline in stock prices during 2007–2009, the historic decline in interest rates during 2001–2003 and 2008–2009, the market boom from 2009 through 2018, and the frequent changes in

the tax laws have increased investor awareness of the importance of financial planning, asset selection and allocation, and portfolio construction.

This text will describe and explain many investment alternatives and strategies. But a textbook cannot make investment decisions for you; it can only provide information about your choices. This text explains techniques for analyzing and valuing financial assets, their sources of risk, and how these risks may be managed, if not eliminated. It is your obligation to learn the material, determine which parts are most relevant, and then apply them to your financial situation.

PORTFOLIO CONSTRUCTION AND PLANNING

Investment decisions are about making choices: Will income be spent or saved? If you choose to save, you face a second decision: What should be done with the savings? Each saver must decide where to invest this command over resources (goods and services) that is currently not being used. This is an important decision because these assets are the means by which investors transfer today's purchasing power to the future. In effect, you must decide on a **portfolio** of assets to own. (Terms will be in boldface and defined in the margin.) A portfolio is a combination of assets designed to serve as a store of value. Poor management of these assets may destroy the portfolio's value, and you will then not achieve your financial goals.

portfolio
An accumulation of assets owned by the investor and designed to transfer purchasing power to the future.

There are many assets (e.g., stocks, bonds, and derivatives) that you may include in the portfolio. This textbook will discuss many of them, but the stress will be on long-term financial assets. While you may hold a portion of the portfolio in short-term assets, such as savings accounts, these assets do not present the problem of valuation and choice that accompanies the decision to purchase a stock or a bond. Understanding how long-term securities are bought and sold, how they are valued, and how they may be used in portfolio construction is the primary focus of this text.

Several factors affect the construction of a portfolio. These include the goals of the investor, the risks involved, the taxes that will be imposed on any gain, and a knowledge of investment alternatives. This text describes these alternative investments, their use in a portfolio, the risks associated with owning them, and their valuation.

The investor's goals should largely determine the construction and management of the portfolio. Investing must have a purpose, for without a goal a portfolio is like a boat without a rudder. Some objective must guide the composition of the portfolio.

There are many reasons for saving and accumulating assets. Individuals may postpone current consumption to accumulate funds to make the down payment on a house, finance a child's education, start a business, meet financial emergencies, finance retirement, leave a sizable estate, or even accumulate for the sake of accumulating. For any or all of these reasons, people construct portfolios rather than spend all their current income.

The motives for saving should dictate, or at least affect, the composition of the portfolio. Not all assets are appropriate to meet specific financial objectives. For example, savings that are held to meet emergencies, such as an extended illness or unemployment, should not be invested in assets whose return and safety of principal are uncertain. Instead, emphasis should be placed on safety of principal and assets that

may be readily converted into cash, such as savings accounts or shares in money market mutual funds. The emphasis should not be on growth and high returns. However, the funds should not sit idle but should be invested in safe assets that offer a modest return.

Other objectives, such as financing retirement or a child's education, have a longer and more certain time horizon. The investor knows approximately when the funds will be needed and so can construct a portfolio with a long-term horizon. Bonds that mature when the funds will be needed or common stocks that offer the potential for growth would be more appropriate than savings accounts or certificates of deposit with a bank. The longer time period suggests the individual can acquire long-term assets that may offer a higher yield.

Most investors have several financial objectives that must be met simultaneously. Thus, it is not surprising to learn that their portfolios contain a variety of assets. Of course, priorities and needs differ. The individual who is employed in a cyclical industry and may be laid off during a recession may place more stress on funds to cover unemployment than would the tenured professor. An individual with a poor medical history may seek to have more short-term investments than the person with good health. Medical coverage or disability insurance will also affect the individual's need for funds to cover a short-term emergency. If the investor has this coverage, more of the portfolio may be directed toward other financial objectives.

In addition to the individual's goals, willingness to bear risk plays an important role in constructing the portfolio. Some individuals are more able to bear (i.e., assume) risk. For example, if the saver wants to build a retirement fund, he or she can choose from a variety of possible investments. However, not all investments are equal with regard to risk and potential return. Those investors who are more willing to accept risk may construct portfolios with assets involving greater risk that may earn higher returns.

Taxes also affect the composition of an individual's portfolio. Income such as interest and realized capital gains are taxed. When a person dies, the federal government taxes the value of the estate, and many states levy a tax on an individual's inheritance. Such taxes and the desire to reduce them affect the composition of each investor's portfolio.

Portfolio decisions are obviously important. They set a general framework for the asset allocation of the portfolio among various types of investments. Individuals, however, rarely construct a portfolio all at once but acquire assets one at a time. The decision revolves around which specific asset to purchase: Which mutual fund? Which bond? Or which stock? Security analysis considers the merits of the individual asset. Portfolio management determines the impact that the specific asset has on the portfolio.

A large portion of this text is devoted to descriptions and analysis of individual securities, because it is impossible to know an asset's effect on the portfolio without first knowing its characteristics. Stocks and bonds differ with regard to risk, potential return, and valuation. Even within a type of asset such as bonds there can be considerable variation. For example, a corporate bond is different from a municipal bond, and a convertible bond differs from a straight bond that lacks the conversion feature. You need to know and to understand these differences as well as the relative merits and risks associated with each of the assets. After understanding how individual assets are valued, you may then construct a portfolio that will aid in the realization of your financial objectives.

PRELIMINARY DEFINITIONS

I went to the doctor and he said, "You have a contusion." I asked, "What is a contusion?" and he said, "A bruise." I thought: "A bruise by another name is still a bruise" and immediately wanted to ask (but did not), "Why not call it a bruise?"

Every discipline or profession has its own terminology. The field of investments is no different. Some of the jargon is colorful (e.g., *bull* and *bear*); some is descriptive (e.g., *primary* and *secondary markets*); and some, like *contusion*, seems to confuse or muddy the waters (e.g., *purchasing power risk*, which is the risk associated with loss from inflation). In order to proceed, it is desirable to know some initial definitions concerning investments, and the best time to learn them and to start using them is now.

investment (in economics)
The purchase of plant, equipment, or inventory.

investment (in lay terms)
Acquisition of an asset such as a stock or a bond.

The term **investment** can have more than one meaning. In economics, it refers to the purchase of a physical asset, such as a firm's acquisition of a plant, equipment, or inventory or an individual's purchase of a new home. To the layperson the word denotes buying stocks or bonds (or maybe even a house), but it probably does not mean purchasing a plant, equipment, or inventory.

In either case, the firm or the individual wants a productive asset. The difference in definition rests upon the aggregate change in productive assets that results from the investment. When firms invest in plant and equipment, there is a net increase in productive assets. This increase generally does not occur when individuals purchase stocks and bonds. Instead, for every investment by the buyer there is an equal *dis*investment by the seller. These buyers and sellers are trading one asset for another: The seller trades the security for cash, and the buyer trades cash for the security. These transactions occur in secondhand markets, and for that reason, securities markets are often referred to as **secondary markets**. Only when the securities are initially issued and sold in the **primary market** is there an investment in an economic sense. Then and only then does the firm receive the money that it, in turn, may use to purchase a plant, equipment, or inventory.

secondary market
A market for buying and selling previously issued securities.

primary market
The initial sale of securities.

In this text, the word *investment* is used in the layperson's sense. Purchase of an asset for the purpose of storing value (and, it is hoped, increasing that value over time) will be called an investment, even if in the aggregate there is only a transfer of ownership from a seller to a buyer. The purchases of stocks, bonds, options, commodity contracts, and even antiques, stamps, and real estate are all considered to be investments if the individual's intent is to transfer purchasing power to the future. If these assets are acting as stores of value, they are investments for that individual.

Assets have **value** because of the future benefits they offer. The process of determining what an asset is worth today is called **valuation**. An investor appraises the asset and assigns a current value to it based on the belief that the asset will generate cash flows (e.g., interest) or will appreciate in price. After computing this value, the individual compares it with the current market price to determine if the asset is currently overpriced or underpriced.

value
What something is worth; the present value of future benefits.

valuation
The process of determining the current worth of an asset.

In some cases, this valuation is relatively easy. For example, the bonds of the federal government pay a fixed amount of interest each year and mature at a specified date. Thus, the future cash flows are known. However, the future cash flows of other assets are not so readily identified. For example, although you may anticipate future dividends, neither their payment nor their amount can be known with certainty. Forecasting future benefits is difficult but crucial to the *process of valuation*. Without

forecasts and an evaluation of the asset, you cannot know if the asset should be purchased or sold.

Because the valuation of some assets is complicated and the future is uncertain, people may have different estimates of the future cash flows. It is therefore easy to understand why two individuals may have completely divergent views on the worth of a particular asset. One person may believe that an asset is overvalued and hence seek to sell it, while another may seek to buy it in the belief that it is undervalued. Valuation may be subjective, which leads to one person's buying while the other is selling. That does not mean that one person is necessarily irrational or incompetent. People's perceptions or estimates of an asset's potential may change, affecting their valuation of the specific asset.

return
The sum of income plus capital gains earned on an investment in an asset.

income
The flow of money or its equivalent produced by an asset; dividends and interest.

capital gain
An increase in the value of a capital asset, such as a stock.

rate of return
The annual percentage return realized on an investment.

risk
The possibility of loss; the uncertainty of future returns.

An investment is made because the investor anticipates a **return**. The total return on an investment is what the investor earns. This may be in the form of **income**, such as dividends and interest, or in the form of **capital gains**, or appreciation if the asset's price rises. Not all assets offer both income and capital appreciation. Some stocks pay no current dividends but may appreciate in value. Other assets, including savings accounts, do not appreciate in value. The return is solely the interest income.

Return is frequently expressed in percentages, such as the **rate of return**, which is the annualized return that is earned by the investment relative to its cost. Before purchasing an asset, the investor anticipates that the return will be greater than that of other assets of similar risk. Without this anticipation, the purchase would not be made. The *realized* return may, of course, be quite different from the *anticipated* rate of return. That is the element of risk.

Risk is the uncertainty that the anticipated return will be achieved. As Chapter 5 discusses, there are many sources of risk. The investor must be willing to bear these risks to achieve the expected return. Even relatively safe investments involve some risk; there is no completely safe investment. For example, savings accounts that are insured still involve some element of risk of loss. If the rate of inflation exceeds the rate of interest that is earned on these insured accounts, the investor suffers a loss of purchasing power.

While the term *risk* has a negative connotation, uncertainty works both ways. For example, events may occur that cause the value of an asset to rise more than anticipated. Certainly, the stockholders of Rubbermaid reaped larger-than-anticipated returns when it was announced the firm would merge with Newell. The price paid for the stock was considerably higher than the price the security commanded before the announcement of the merger.

speculation
An investment that offers a potentially large return but is also very risky; a reasonable probability that the investment will produce a loss.

A term that is frequently used in conjunction with risk is **speculation**. Many years ago, virtually all investments were called *speculations*. Today the word implies a high degree of risk. However, risk is not synonymous with speculation. Speculation has the connotation of gambling, in which the odds are against the player. Many securities are risky, but over a period of years the investor should earn a positive return. The odds are not really against the investor, and such investments are not speculations.

The term *speculation* is rarely used in this text, and when it is employed, the implication is that the individual runs a good chance of losing the funds invested in the speculative asset. Although a particular speculation may pay off handsomely, the investor should not expect that many such gambles will reap large returns. After the investor

adjusts for the larger amount of risk that must be borne to own such speculative investments, the anticipated return may not justify the risk involved.

Besides involving risk and offering an expected return, stores of value have marketability or liquidity. These terms are sometimes used interchangeably, but they may also have different definitions. **Marketability** implies that the asset can be bought and sold. Many financial assets, such as the stock of AT&T, are readily marketable.

marketability
The ease with which an asset may be bought and sold.

liquidity
Moneyness; the ease with which assets can be converted into cash.

The ease with which an asset may be converted into money is its **liquidity**. Unfortunately, the word *liquidity* is ambiguous. In academic writings on investments, liquidity usually means ease of converting an asset into cash *without loss*. A savings account with a commercial bank is liquid, but shares of IBM would not be liquid, since you could sustain a loss. In professional writings, liquidity usually means ability to sell an asset without affecting its price. In that context, liquidity refers to the *depth* of the market for the asset. You may be able to buy or sell 1,000 shares of IBM stock without affecting its price, in which case the stock is liquid. The context in which the word is used often indicates the specific meaning.

All assets that serve as stores of value possess some combination of marketability, liquidity, and the potential to generate future cash flow or appreciate in price. These features, along with the risk associated with each asset, should be considered when including the asset in an individual's portfolio. Since assets differ with regard to their features, you need to know the characteristics of each asset. Much of the balance of this text describes each asset's features as well as its sources of risk and return and how it may be used in a well-diversified portfolio.

DIVERSIFICATION AND ASSET ALLOCATION

Chapter 5 indicates that the impact of asset-specific risk may be diversified away. As that chapter explains in detail, to achieve diversification the returns on your investments must not be highly correlated. Factors that negatively affect one security must have a positive impact on others. For example, higher oil prices may be good for ExxonMobil but bad for Delta Air Lines. By combining a variety of disparate assets, you achieve diversification and reduce risk.

Asset allocation refers to acquiring a wide spectrum of assets. Individuals use their finite resources to acquire various types of assets that include stocks, bonds, precious metals, collectibles, and real estate. Even within a class such as stocks, the portfolio is allocated to different sectors or geographic regions. For example, you may own domestic stocks and stocks of companies in emerging nations. It would appear that "asset allocation" and "diversification" are synonymous, and to some extent they are. By allocating your assets over different types of assets, you contribute to the diversification of the portfolio. But asset allocation and diversification are often used in different contexts. For example, you may tilt your allocation toward energy stocks and away from airlines if you anticipate high gas prices. Your allocation between stocks, bonds, and other assets remains the same, but the allocation between two sectors is altered.

The words *diversification* and *asset allocation* are often used in this text. Diversification is important because it reduces your risk exposure. Asset allocation is important because it has a major impact on the return your portfolio earns. Whenever you make

an investment decision, you need to consider its impact on the diversification of your portfolio and the allocation of your assets. Both are crucial components of portfolio management.

EFFICIENT AND COMPETITIVE MARKETS

Have you ever been fishing? (If not, substitute playing golf or some similar activity.) Did you catch any fish? Which fish did you talk about? The answer to that question is probably the "big one" or the "big one that got away." What is more important, of course, is the size of the average fish (or average golf score). If you go fishing several times, you will not catch a "big one" every time or even frequently. The average size of the fish you catch becomes the norm. And other individuals who fish in the same waters will have comparable results. Unless they have special skills or knowledge, most individuals' catch should be similar to and approach the average size of fish that is caught.

In many ways, the fishing analogy applies to investing in stock. Individuals tend to talk about the big return ("I bought X and it doubled within a week") or the lost opportunity ("I bought Plain and Fancy Doughnuts of America. It rose 80 percent within an hour and I did not sell"). But what matters is the return you earn after making many investments over an extended period of time. Unless you have special skills or knowledge, that return should tend to be comparable to the return earned by other investors in comparable investments.

Why is this so? The answer lies in the reality that investors participate in efficient and competitive financial markets. Economics teaches that markets with many participants (i.e., buyers and sellers) who may enter and exit freely will be competitive. That certainly describes financial markets. Investors may participate freely in the purchase and sale of stocks and bonds. Virtually anyone, from a child to a grandmother, may own a financial asset, even if it is just a savings account. Many firms, including banks, insurance companies, and mutual funds, compete for the funds of investors. The financial markets are among the most (and perhaps *the* most) competitive of all markets.

Financial markets tend to be efficient. As is explained throughout this text, securities prices depend on future cash flows, such as interest or dividend payments. If new information suggests that these flows will be altered, the market rapidly adjusts the asset's price. Thus, an efficient financial market implies that a security's current price embodies all the known information concerning the potential return and risk associated with the particular asset. If an asset, such as a stock, were undervalued and offered an excessive return, investors would seek to buy it, which would drive the price up and reduce the return that subsequent investors would earn. Conversely, if the asset were overvalued and offered an inferior return, investors would seek to sell it, which would drive down its price and increase the return to subsequent investors. The fact that there are sufficient informed investors means that a security's price will reflect the investment community's consensus regarding the asset's true value and also that the expected return will be consistent with the amount of risk the investor must bear to earn the return.

The concept of an efficient financial market has an important and sobering corollary. Efficient markets imply that investors (or at least the vast majority of investors) cannot expect on average to beat the market *consistently.* Of course, that does not mean

an individual will never select an asset that does exceedingly well. Individuals can earn large returns on particular assets, as the stockholders of many firms know. Certainly, the investor who bought Gold Kist stock on Friday, August 18, 2006, for $12.93 and sold it one trading day later on Monday, August 21, 2006, for $19.02 made a large return on that investment. (After trading closed on August 18, it was announced that Pilgrim's Pride would buy Gold Kist for $20 per share.) The concept of efficient markets implies that this investor will not consistently select those individual securities that earn abnormally large returns.

If investors cannot expect to outperform the market consistently, they also should not consistently underperform the market. (That is, you would not always be the investor who *sold* Gold Kist just prior to the large increase in its price.) Of course, some securities may decline in price and inflict large losses on their owners, but efficient markets imply that the individual who constructs a well-diversified portfolio will not always select the stocks and bonds of firms that fail. If such individuals do exist, they will soon lose their resources and will no longer be able to participate in the financial markets.

While the concept of efficient financial markets permeates investments, the question remains: How efficient? Do exceptions to the efficient market hypothesis exist? Many of the various investment techniques and methods of analysis covered in later chapters are designed to help identify possible anomalies and increase investment returns. You, of course, will have to decide for yourself how efficient you believe financial markets are, because that belief should determine which of the many investment strategies to follow. A stronger belief in efficiency argues for a more passive strategy. If you think markets are inefficient or that there are pockets of inefficiency that you can exploit, then you will want to follow a more aggressive, active strategy.

PORTFOLIO ASSESSMENT

Much of the popular press places emphasis on returns without considering risk. Mutual funds are often ranked on the basis of return. Statements such as "portfolio manager of growth fund X earned the highest return for the last three months" often appear in the popular financial press. The portfolio managers of the best-performing funds appear on *Bloomberg* or CNBC. Obviously, some fund manager had to earn the highest return for the last quarter. (Some student also earned the highest grade on my last test.)

While it can be useful to rank and compare returns, investments involve risk. You certainly will not read in *Money* or see on TV the portfolio manager of fund X who achieved the highest level of risk! But it could also be useful to rank and compare risk as well as returns. Throughout this text, risk and return are often related. You make an investment in order to earn an expected return and have to bear the risk associated with that investment. After investments are sold (or redeemed), both the realized returns and the variability of those returns may be calculated. While particular sections of this text may discuss only risk or return, the fusion of the two cannot be far away.

You should start now to think of return in a risk context. How does this investment decision affect my risk exposure? Can I reduce risk without reducing my return? How may I compare returns on a risk-adjusted basis? Chapter 6 on investment companies presents several methods for ranking returns on a risk-adjusted basis. In both the professional and academic investment environments, these risk adjustments are important.

As an informed investor, you too should want to compare returns and portfolio performance on a risk-adjusted basis.

"TRADING" VERSUS "INVESTING"

If you purchase 100 shares of IBM, it is reasonable to expect that you will refer to the purchase as a "trade." You will probably not refer to the purchase as an "investment." The same applies when you sell the shares, even if you hold the position for years. The word *trading* has become part of everyday vocabulary and appears to have supplanted the word *investing*. Trading generally implies either buying or selling securities, and the implied time period is short. The extreme case is "day trading" in which the purchase and sale are made within a day.

Investing implies a different perspective. You acquire assets to meet specified financial needs such as a savings account to cover a financial emergency or a stock in your retirement account. The basic premise is not the purchase and subsequent sale of the asset. Your time horizon is longer. While you could sell the stock, the intent is to hold the stock for its potential growth and to sell it when the funds are needed in retirement.

Some individuals, especially those in academics, will refer to trading as a "zero-sum game." These individuals emphasize that financial markets require two participants, a buyer and a seller. (As the song goes, "It takes two to tango.") Since trading encompasses both buying and selling, it is important to realize that both parties cannot be correct. Suppose you buy a stock at 10 a.m. with the intention of selling it by noon at a higher price. If the price does rise and you sell for a profit, the individual from whom you bought the stock has lost that opportunity. Of course, if the price declines and you sell for a loss, the initial seller won because the stock is now worth less. One party's gain is the other party's loss, hence a zero-sum game.

While, in the past, individuals would acquire stocks and other financial assets with the intention of holding them for years, today there is evidence that stocks are held for less than a year and in some cases for only a few minutes. That is the essence of trading. You make the purchase with an intent to quickly sell. This text, however, is not a book designed for traders. The emphasis is on investing, that is, acquiring specific assets to meet financial objectives. In order to make such investments, you need to know basic, fundamental information concerning financial assets, their sources of return, and the risks you bear. This text cannot teach you how to trade successfully, but it can give you basic financial information to help you achieve your financial objectives.

ASSUMPTIONS

Much of the financial analysis used to make investment decisions, covered in the subsequent chapters, is built on assumptions. Consider the following illustration. Every year you contribute $1,000 to your retirement account. If you earn 4 percent annually, how much will be in the account after 10 years? The answer to the question depends on the following assumptions. (1) You make the $1,000 contribution each year, not more and not less; (2) you make the contributions for 10 years; and (3) you earn 4 percent every year for the 10 years. There is also another assumption that is not stated but must be

made in order to answer the question. Are the $1,000 contributions made at the beginning of the year, during the year, or at the end of each year? If you assume they are made at the beginning of the year, you collect interest for 10 years. If you make the payments at the end of each year, you collect interest for only 9 years. Obviously, the final amount will depend on the timing of the contributions.

Throughout this text, assumptions have to be made to illustrate the concepts. In some cases, the wording implies an assumption. For example, investors *anticipate* or *expect* a percentage return of XX percent. In other cases, historical data or current data are assumed to apply in the future. For example, annual historical stock returns were YY percent. The analysis then *assumes* the historical return may be used to forecast future returns. The actual results will depend on the validity of the assumption. The obvious implication is that financial models and their applications can be only as good as the accuracy of the assumptions used to complete the analysis.

PROFESSIONAL DESIGNATIONS AND CERTIFICATIONS

You probably know that CPA stands for certified public accountant. While you can do accounting work without passing the CPA exam, becoming a CPA is the minimum standard for working as a public accountant. (There is also a CMA for management accounting.)

Careers in financial planning, portfolio management, and investments also have professional certifications and license requirements. For example, passing the Series 7 exam given by the Financial Industry Regulatory Authority (**www.finra.org**) is required for you to become a registered representative (broker) who acts as an account executive for clients. To become an investment advisor and provide research and opinions on securities and the securities market, you must pass the Series 66 (or comparable) exam. (For information on the Series 66 exam, see the North American Securities Administrators Association [NASAA] webpage at **www.nasaa.org**.)

While professional designations are not required for you to buy and sell securities and to construct a portfolio, you should consider pursuing one if you plan on a career in some facet of investments. The following list, in alphabetical order, provides several financial professional designations and where you may obtain information concerning them.

Chartered Alternative Investment Analyst (CAIA), granted by the CAIA Association (**www.caia.org**)

Chartered Financial Analyst (CFA), granted by the CFA Institute (**www.cfainstitute.org**)

Certified Financial Planner (CFP), granted by the Certified Financial Planner Board of Standards (**www.cfp.net**)

Chartered Financial Consultant (ChFC), granted by the American College of Financial Services (**www.chfc-clu.com**)

THE INTERNET

Web addresses appear throughout this text. Much information can be obtained through the Internet free of charge, but some vendors do charge a fee for the material. While many of the websites provided in the text are free, fee sites are included. Some of these fee sites have complimentary information that you may find useful.

With the existence of the Internet, you face several important problems. First, too much information may be available, or you may obtain contradictory information from different sites. A defined topic, such as growth mutual funds, will generate more facts and data than you could possibly assimilate. The information problem is compounded because growth mutual funds are tied to other areas of investments, such as taxation or financial planning. Selecting a growth mutual fund (or any investment) may be tied to psychology, which can help explain why some investors prefer a particular fund or have a particular financial strategy. A developing area of finance, behavioral finance, would argue that you will select the information that justifies or supports your preconceived investment ideas.

The second problem with information received through the Internet concerns its accuracy. You may not know the provider's motivation! If you access a company's or government agency's webpage, the information should be accurate. If you make a general search for information on a company, the data, analysis, and recommendations you find may be inaccurate or even purposefully misleading. In addition, misleading information can be sent directly to you through the Internet. The *Wall Street Journal* reported a story concerning individuals who had received an e-mail stock tip promoting a company called Maxnet Inc. The stock was selling for $3 but an unnamed analyst believed the stock could reach $50. After the bogus e-mail generated buying, the price of Maxnet Inc. stock quickly rose but just as quickly declined when the scam was discovered.

Buying stock based on such unsolicited recommendations is a recipe for disaster. Unscrupulous individuals can create stories designed to persuade people to buy a stock and inflate its price so the creators of the stories can unload the security. Such actions are not new. Touting a stock to unsuspecting investors has probably occurred since trading in stocks began. The Internet, however, creates the possibility of such fraud on a large scale. One broker told me that he often receives stock recommendations through e-mail. While some of these recommendations may come from legitimate financial analysts, others appear to be scams.

There is probably little you (or anyone else) can do to stop the dissemination of inaccurate information through the Internet, but you do not have to act on it. If you limit your search to reliable sources, then the Internet (or any other source of data or advice) can help you make investment decisions. If you indiscriminately use the Internet (or any other source) to make investment decisions, then you too can become a victim of a scheme to drive up prices so those perpetrating the scam can sell securities at inflated prices.

THE PLAN AND PURPOSE OF THIS TEXT

Because you participate in efficient financial markets and compete with informed investors, including professional securities analysts and portfolio managers, you need fundamental information concerning investments. This text helps you to increase your knowledge of the risks and returns from various investment alternatives. Perhaps because investing deals with individuals' money and the potential for large gains or losses, it seems more mysterious than it should. By introducing the various investments and the methods of their analysis, valuation, and acquisition, this text removes the mystery associated with investing.

The number of possible investment alternatives is virtually unlimited. Shares in thousands of corporations are actively traded, and if an investor does not want to select

individual stocks, he or she still has over 8,000 investment companies from which to choose. Corporations, the federal government, and state and local governments issue a variety of debt instruments that range in maturity from a few days to 30 or 40 years. More than 10,000 commercial banks and thrift institutions (e.g., savings banks) offer a variety of savings accounts and certificates of deposit. Real estate, futures, options, and collectibles further increase the available alternatives, and, as if there were insufficient domestic choices, the investor may purchase foreign securities. The problem is not one of availability but of choice. You cannot own every asset but must choose among the alternatives.

Frequently, investment alternatives are classified as short-term (one year) or long-term (greater than one year), variable-income or fixed-income, or defensive or aggressive (even speculative). Short-term assets, such as savings accounts and shares in money market mutual funds, are readily converted into cash and offer modest returns. Bonds and stocks have a longer time horizon and are referred to as *long-term investments*. Common stock is also referred to as a *variable-income security* because the dividends and capital gains may fluctuate from year to year. Bonds illustrate a fixed-income security. While the investor's return from such investments can vary, the flow of income generated by bonds and preferred stock is fixed, so these securities are referred to as *fixed-income securities*. Options, convertible bonds, and futures may be considered aggressive investments because they may offer high returns but require the investor to bear substantial risk. Other possible investments include nonfinancial assets (tangible or real assets) such as real estate, gold, and collectibles.

The subject of investments is sometimes viewed as complex, but the approach in this text is to isolate each type of asset. The sources of return, the risks, and the features that differentiate each are described. Techniques for analyzing and valuing the assets are explained. Most of the material is essential information for all investors, whether they have large or small portfolios.

This text is divided into parts. The first lays the foundation on which security selection and portfolio management are based. This encompasses how securities come into existence and are subsequently bought and sold (Chapter 2). Chapter 3 covers the process of compounding and discounting. Since valuation is the process of determining the present value of future cash flows and financial planning involves projecting future cash needs, no topic is more important to the study of investments than the time value of money. (If you already know this material, you may move on to the next chapter, but you do so at your own risk!) Financial planning, the allocation of assets, and the impact of taxation are covered in Chapter 4. The analysis and measurement of risk constitute the bulk of Chapter 5. Because calculating and interpreting measures of risk require knowledge of selected statistics, Chapter 5 has an appendix on statistical methods that apply to risk measurement.

The second part of the text is devoted to investment companies. Chapter 6 covers mutual funds, their portfolios, returns, buying and redeeming their shares, and measures to standardize returns for risk. Chapter 7 is devoted to alternatives to the traditional mutual fund: closed-end funds, exchange-traded funds (ETFs), and real estate investment trusts (REITs).

Parts 3 through 5 concern specific types of financial assets. Part 3 is devoted to investments in equity. Chapters 8 and 9 discuss the analysis and valuation of common stock. The next two chapters cover measures of the stock market and historic

returns (Chapter 10) and the macroeconomic environment (Chapter 11). The last chapter (Chapter 12) adds behavioral finance and the use of technical analysis to aid in the selection of securities.

Part 4 covers fixed-income securities. Chapter 13 describes the features common to all debt instruments and the variety of corporate bonds. Chapter 14 covers bond pricing, yields, the impact of changing interest rates, and the management of risk. Chapter 15 adds the various types of federal, state, and local government bonds. The last chapter in Part 4 (Chapter 16) is devoted to fixed-income securities that may be exchanged for the issuing firm's common stock.

Part 5 considers derivatives, whose value is related to (derived from) another asset. Chapter 17 provides a general introduction to options (puts and calls), and Chapter 18 expands the material to include option valuation and option strategies. Chapter 19 covers futures, which are perhaps the riskiest of all the investment alternatives covered in this text.

Chapter 20 returns to the themes of financial planning and the allocation of assets to achieve the individual investor's financial goals. This chapter serves both as a capstone and a review as it encompasses the construction of a diversified portfolio, the allocation of investment resources, and active and passive management of an individual's portfolio in an efficient market context.

SUMMARY

This chapter has introduced important financial concepts that apply to investments and investment decision making. These concepts are the following:

- the importance of setting financial goals
- asset valuation as the present value of future cash flows
- the trade-off between risk and return
- the management of risk through asset allocation and the construction of a diversified portfolio
- the efficiency of financial markets
- the need to assess performance on a risk-adjusted basis

Each of these themes reappears at various places throughout this text. Even though a chapter may be devoted to a specific topic such as mutual funds or convertible securities, these specific assets ultimately must fit into a portfolio. It is important to know the features, risks, and returns of a specific security, but you need to remember that each individual asset is only a part of your portfolio. While a particular investment may do exceptionally well or exceptionally poorly, it is the aggregate portfolio that helps you achieve your financial objectives.

The Financial Advisor's Investment Case

Investment Assignment (Part 1)

1. You have $100,000 to invest in 10 stocks, $10,000 in each (no mutual funds). You may not alter your selections during the semester, and cash is not an option. (Sorry; the purpose of this assignment is not to teach trading. Additional material will be added as the semester progresses.) Select an Internet source and set up a "watch account." Possible websites with information on companies include the following:

   - Bloomberg: **www.bloomberg.com**
   - CNN/Money: **www.cnn.com/business**
   - Forbes: **www.forbes.com**
   - Google: **www.google.com/finance**
   - MarketWatch: **www.marketwatch.com**
   - Morningstar: **www.morningstar.com**
   - MSN Money: **www.msn.com/en-us/money**
   - Reuters: **www.reuters.com**
   - Yahoo! Finance: **finance.yahoo.com**

   The watch account will help you follow the stocks over time and keep track of your gains or losses.

2. One successful portfolio manager, Peter Lynch, has suggested that you should buy stock in companies that you know or whose products you use. Since this strategy may be as good a starting point as any to learn about investing, I have selected five stocks I know or whose products I use. You should select five and track your five against mine. Using the information in the previous assignment, set up a watch account that includes both sets.

   My stocks and their ticker symbols are

   Coca-Cola (KO)
   ExxonMobil (XOM)
   Merck (MRK)
   Tupperware (TUP)
   Washington Real Estate Investment Trust (WRE)

   Since disclosure is important in investments, you should know that I had a position in each stock at the time this text went to press.

Securities Markets

CHAPTER 2

LEARNING OBJECTIVES

After completing this chapter you should be able to:

1. Explain the role of market makers and distinguish between securities exchanges and over-the-counter markets.
2. Differentiate between the types of security orders and identify the costs of investing in securities.
3. Contrast cash and margin accounts.
4. Contrast long and short positions and explain the source of profit from each.
5. Define American Depositary Receipts (ADRs) and explain their advantages.
6. State the purpose of the Securities and Exchange Commission (SEC) and the Securities Investor Protection Corporation (SIPC) and the role of regulation in securities markets.
7. Identify the components necessary for the sale of securities to the general public.
8. Examine the price volatility of new issues (IPOs).

On January 2, 2019, over 4.2 million shares of IBM traded on the New York Stock Exchange. In all, over 4.1 billion shares of stock traded that day on the New York Stock Exchange. Not one penny of the proceeds of those sales went to the firms whose stocks were exchanged. Instead, all these transactions were among investors. Obviously, many individuals were altering their portfolios through either buying or selling these existing securities.

This buying and selling of securities has a certain mystique or fascination both for the novice and for the seasoned investor. Investors may be drawn to securities by the excitement generated by trading securities. Perhaps the investor's fascination is the result of the fact that many dollars can be earned or lost through investments in stocks and bonds. For whatever reason, investors who are drawn to Wall Street must understand both how securities markets work and the mechanics of buying and selling securities.

The purpose of this chapter is to explain the sale of securities to the general public and the mechanics of buying and selling securities. The initial section covers securities dealers and the role of secondary markets such as the New York Stock Exchange. Next follows descriptions of how the individual trades securities, the role of brokers, the

variety of orders, margin versus cash accounts, and the cost of buying and selling securities. Although you make money by buying low and selling high, either the purchase or the sale may come first. The third section is devoted to the short sale, which is a sale for future delivery. The investor initially sells the stock in anticipation of buying it back at a lower price.

Securities markets, like many financial markets, are subject to regulation. The federal regulation of the securities markets and the role of the Securities and Exchange Commission (SEC) are covered next. The chapter concludes with a discussion of initial public offerings (IPOs), in which funds are transferred from investors to firms. The emphasis is on the process of the initial sale, the role of investment bankers, and the subsequent volatility of the securities' prices in the secondary markets.

SECONDARY MARKETS AND THE ROLE OF MARKET MAKERS

Although securities are issued in the primary market, all subsequent transactions are in the secondary markets. If an investor buys a stock, it is highly unlikely that the purchase is part of the IPO. Instead, the individual buys the stock in one of the secondary markets.

This section covers securities dealers (market makers) and their role in secondary markets. Securities are bought and sold every day by investors who never meet each other. The market transfers stocks and bonds from individuals who are selling to those who are buying. This transfer may occur on an organized exchange such as the New York Stock Exchange, which is sometimes referred to as *Big Board*. (In 2007 the NYSE Group, the parent of the New York Stock Exchange, merged with Euronext NV to form the NYSE Euronext, the world's largest stock exchange.) Trading in a stock on an exchange is not automatic. A company must apply to have its securities accepted for trading. If the company meets the conditions set by the exchange, the securities are "listed" and may be bought and sold through the exchange.

Once shares have been accepted for trading and the company subsequently fails to maintain the listing requirements, it may be delisted. In February 2015, Corinthian Colleges was delisted from Nasdaq for failing to submit required documents with the SEC. GM was delisted from the NYSE as it went through bankruptcy and reorganization. After GM emerged from bankruptcy, the new, reorganized shares were listed and trading resumed.

Securities of public companies with shares that are not listed on an exchange are traded **over-the-counter (OTC)**. The most important OTC market is the Nasdaq stock market (**http://www.nasdaq.com**). Nasdaq is an acronym for National Association of Securities Dealers Automated Quotation system, which is the system of communication for OTC price quotations. (Some companies such as Microsoft and Intel choose not to have their shares traded on one of the exchanges.) All major unlisted stocks are included in the Nasdaq stock market. Investors may readily obtain bid and ask prices for many OTC stocks and bonds by simply entering the security's symbol into the system.

over-the-counter (OTC) market
The informal secondary market for unlisted securities.

In either case, a listed or an unlisted security, professional securities dealers make markets in stocks and bonds and facilitate their transfer from sellers to buyers. The

dealers
Market makers who buy and sell securities for their own accounts.

Securities and Exchange Act of 1934 defines a **dealer** as anyone who engages in the "business of buying and selling for his *own account*." Buying and selling for your own account has the effect of making a market in the security. These dealers are referred to as *market makers* who offer to buy securities from any seller and to sell securities to any buyer. In effect, a market maker engages in the "business of buying and selling securities for his *own account*."

Every NYSE stock has a "designated market maker" or DMM. The DMM supervises trading in a company's stock to ensure that trading (buying and selling) goes smoothly. If trading were to become volatile, the DMM would step in and buy or sell the securities for his or her own account, in effect offering to buy securities from sellers and sell securities to buyers. By making a market in individual securities, the DMM makes it possible for the investor to buy and sell stocks.

round lot
The general unit of trading in a security, such as 100 shares.

odd lot
A unit of trading, such as 22 shares, that is smaller than the general unit of sale.

Transactions are made in either round lots or odd lots. A **round lot** is the normal unit of trading and for stocks that is usually 100 shares. Smaller transactions such as 37 shares are called **odd lots**. The vast majority of trades are round lots or multiples of rounds lots. The volume and value of transactions for many stocks is substantial. For example, on February 13, 2015, some 1.9 million shares of Google (GOOG) traded. At the closing price of $549, the total value of those trades was approximately $1.04 billion ($549 × 1.9 million). There are, however, stocks that are inactively traded. Such issues are referred to as *thin* and are generally the stock of small companies with a modest number of shares outstanding.

bid and ask
Prices at which a securities dealer offers to buy and sell stock.

Market makers quote prices on a **bid and ask** basis; they buy at one price (the bid) and sell at the other price (the ask). A market maker may be willing to purchase a specific stock for $20 and sell for $21. The security is then quoted "20–21," which are the bid and ask prices. For example, if the quote for National Retail Properties is 41.05–41.10, I can currently buy the stock for $41.10 and sell it for $41.05.

spread
The difference between the bid and the ask prices.

The difference between the bid and the ask is the **spread** (i.e., the $0.05 difference between $41.10 and $41.05 for National Retail Properties). The spread, like brokerage commissions, is part of the cost of investing. These two costs should not be confused. The spread is one source of compensation for maintaining a market in the security. The broker's commission is compensation for executing your purchase or sell orders.

While the spread is a primary source of compensation for market makers, it is not their only source. Market makers also earn income when they receive dividends and interest from the securities they own. Another source of profit is an increase in securities prices, for the value of the dealers' portfolios rises. These profits are a necessary element of securities markets because they induce the market makers to serve the crucial function of buying and selling securities. These market makers guarantee to buy and sell at the prices they announce. Thus, an investor knows what the securities are worth at any given time and is assured that there is a place to sell current securities holdings or to purchase additional securities.

Determination of Prices

equilibrium price
A price that equates supply and demand.

Although the bid and ask prices are quoted by market makers, securities prices are set by the demand from all buyers and the supply from all sellers of securities. Market makers try to quote an **equilibrium price** that equates the supply with the demand.

If market makers bid too low a price, too few shares will be offered to satisfy the demand. If they ask too high a price, too few shares will be purchased, which will result in a glut, or excess shares, in their portfolios.

Could market makers set a security's equilibrium price? For large companies the answer is probably no. If the market makers tried to establish a price above the equilibrium price that is set by supply and demand, they would have to absorb all of the excess supply of securities that would be offered at the artificially higher price. Conversely, if the market makers attempted to establish a price below the equilibrium price, they would have to sell a sufficient number of securities to meet the excess demand that would exist at the artificially lower price. The buying of securities requires the delivery of the securities sold. Market makers do not have an infinite well of money with which to purchase the securities nor an unlimited supply of securities to deliver. They may increase or decrease their inventory, but they cannot support the price indefinitely by buying securities, nor can they prevent a price increase by selling them.

Although market makers cannot set the market price, they perform an extremely important role: They maintain an orderly market in securities so that buyers and sellers will have an established market in which to trade. To establish this orderly market, the market makers offer to buy and sell at the quoted bid and ask prices but guarantee only one round-lot transaction at these prices. If a market maker sets too low a price for a certain stock, a large quantity will be demanded by investors. The market maker is required to sell only one round lot at this price and then may increase the bid and ask prices. The increase in the price of the stock will (1) induce some holders of the stock to sell their shares and (2) induce some investors who wanted to purchase the stock to drop out of the market.

If the market maker sets too high a price for the stock, a large quantity of shares will be offered for sale, but these shares will remain unsold. If the market maker is unable to or does not want to absorb all these shares, the securities dealer may purchase a round lot and then lower the bid and ask prices. The decline in the price of the stock will (1) induce some potential sellers to hold their stock and (2) induce some investors to enter the market by purchasing the shares, thereby reducing any of the market maker's surplus inventory.

Composite Transactions

With the development of online trading, the distinction between the various exchanges and the OTC market is being erased. (The distinction between exchanges and OTC markets was reduced by the merger of the American Stock Exchange [AMEX] and Nasdaq in November 1998.) Since New York Stock Exchange securities trade on other exchanges, the actual reporting of New York Stock Exchange listings includes all the trades and is reported as the NYSE-Composite transactions.

third market
Over-the-counter market for securities listed on an exchange.

In addition to the primary market (the initial sale of the security) and the secondary market (subsequent trading in the security), there is also the **third market**, which is OTC trading in listed securities. While any trades in listed securities off the exchange may be referred to as the *third market*, the bulk of these trades are large transactions. Such large trades (i.e., 10,000 shares or more) are called *blocks*, and the market makers who organize and execute the trades are referred to as *block positioners*.

The participants in the third market are usually institutional investors, such as pension plans, mutual funds, or insurance companies, who want to buy or sell large amounts of stocks in listed securities, such as the stock of IBM, which trades on the NYSE. The institutional investor works through a large brokerage firm that completes the transaction. If the investor desires to buy a large position, the brokerage firm (or securities dealer) seeks potential sellers. After the required seller (or sellers, for a sufficiently large block) is found, the securities are traded off the floor of the exchange.

Financial institutions may also trade securities through computerized systems such as *Instinet*. This system is limited to those financial institutions that subscribe to the service. Block trade, third-market trading, and computerized systems offer financial institutions two advantages: lower commissions and faster executions. Competition among brokerage firms has reduced fees, and computerized trading has reduced the time necessary to execute trades.

While block trading and computerized systems are concerned with large transactions, a market also exists for securities at the opposite end of the price spectrum. When Mirant declared bankruptcy and the NYSE suspended trading, the stock continued to trade and quotes were found in the "pink sheets." This occurrence is common when firms fall on hard times and shares are delisted. Originally printed on pink paper, the pink sheets are a daily listing of OTC stocks that are not traded through Nasdaq. Most of these stocks trade for mere pennies. The volume of transactions is small, and the value of daily transactions may be less than $1 million. Obviously these securities are only appropriate for speculators who are willing to bear substantial risk associated with penny stocks.

The "Buy Side" and the "Sell Side" of the Street

Investors buy stock at the asking price and sell at the bid. The purchases and sales are executed by brokers and are made through securities dealers. Are these participants the "buy side" and "sell side" of Wall Street? If a financial analyst works the "buy side" or the "sell side" of Wall Street, does that mean he or she is buying or selling stocks and bonds?

The answer is no. A *financial analyst* (or *securities analyst* or *investment analyst*—all three names are used) is an individual who analyzes financial statements, interviews corporate management, and uses other sources of information to construct earnings estimates and buy or sell recommendations for individual securities. These analysts are not brokers and are not securities dealers, and they are not buying and selling for their own accounts. They are (very well) paid employees who work for money management firms and brokerage houses.

A buy-side analyst works for a nonbrokerage firm that manages mutual funds, pension plans, or trust services for corporate clients or individual investors. The buy-side analyst provides recommendations, which are given to the firm's portfolio managers, who buy and sell securities. Since these analysts are developing recommendations for possible purchases by their employers, they work the "buy side" of the Street.

A sell-side analyst does the same type of work but is employed by a brokerage firm. The sell-side analyst's recommendations are provided to the brokers who, in turn, give the recommendations to investors. The purpose of a sell-side analyst's reports is to generate sales, hence the name "sell side."

Since buy-side analysts' reports are solely for their employers' use, the recommendations may remain private. Sell-side analysts' reports, however, become public, and this creates a potential conflict of interest or at least a potential bias in the analysis. There are several possible reasons for this bias. First, analysts may issue favorable reports to maintain good relationships with corporate management, since executives are one source of an analyst's information. Second, the corporation may employ an underwriter to issue new securities. Analysts do not want to lose this future business for their brokerage firms. Third, analysts' reports are designed to encourage transactions, especially purchases, by the brokerage firm's customers. Any of these reasons could cause an analyst to issue a favorable report concerning a firm and its securities. Since more favorable reports are issued than negative reports, one could easily draw that conclusion.

THE MECHANICS OF INVESTING IN SECURITIES

broker
An agent who handles buy and sell orders for an investor.

Individual investors usually purchase stocks and bonds through **brokers**, who buy and sell securities for their customers' accounts. (Some brokerage firms use different titles, such as "account executive" or "assistant vice president." These individuals perform the traditional functions of "brokers.") While a few companies (e.g., ExxonMobil) offer investors the option to purchase shares directly from the corporation, the majority of purchases are made through brokerage firms, such as Merrill Lynch or Charles Schwab. Many brokerage firms also act as market makers and may be referred to as *broker-dealers* since different divisions within the firm perform both functions. The firm has individuals who buy and sell for the firm's account (i.e., are securities dealers) and other individuals who buy and sell for customers' accounts (i.e., are brokers).

The broker services an individual's account and is the *investor's agent* who executes buy and sell orders. To be permitted to buy and sell securities, brokers must pass a proficiency examination administered by the National Association of Securities Dealers (NASD). Once the individual has passed the test, he or she is referred to as a **registered representative** and can buy and sell securities for customers' accounts.

registered representative
A person who buys and sells securities for customers; a broker.

Although registered representatives must pass this proficiency examination, the investor should not assume that the broker is an expert. There are many aspects of investing, and even an individual who spends a considerable portion of the working day servicing accounts cannot be an expert on all the aspects of investing. Thus, many recommendations are based on research that is done by analysts employed by the brokerage firm rather than by individual salespersons.

The investor should realize that brokers make their living through transactions (i.e., buying and selling for their customers' accounts). There are essentially two types of working relationships between the brokerage firm and the salesperson. In one case, the firm pays a basic salary, but the salesperson must bring in a specified amount in commissions, which go to the firm. After the minimum amount of sales has been met, the registered representative's salary is increased in proportion to the amount of additional commissions generated. In the second type of relationship, the salesperson's income is entirely related to the commissions generated. In either case, the investor should realize that the broker's livelihood depends on the sale of securities. Thus, the broker's advice on investing may be colored by the desire to secure commissions.

However, the investor is ultimately responsible for the investment decisions. Although advice may be requested from the broker, and it is sometimes offered even though unsolicited, the investor must weigh the impact of a specific investment decision in terms of fulfilling his or her financial goals.

Selecting a brokerage firm can be a difficult task. Various firms offer different services; for example, some may specialize in bonds. Other brokerage firms offer a full range of services, including estate planning and life insurance, as well as trading of stocks and bonds. Still other firms offer virtually no services other than executing orders at discount (i.e., lower) commissions. Each investor therefore needs to identify his or her personal investment goals and decide on the strategies to attain those goals in order to select the firm that is best suited to that individual's needs.

Choosing a registered representative or financial advisor is a more difficult task than selecting a brokerage firm. This individual will need to know specific information, including the investor's income, other assets and outstanding debt, and financial goals, in order to give the best service to the account. People are reluctant to discuss this information, so trust and confidence in the registered representative are probably the most important considerations in selecting a broker or financial advisor. Good rapport between the broker and the investor is particularly important if the relationship is going to be mutually successful.

The Long and Short Positions

Essentially, an investor has only two courses of action, which involve opposite positions. They are frequently referred to as the *bull* and *bear* positions and are symbolized by a statue, which is located outside the NYSE, of a bull and a bear locked in mortal combat. (The derivations of "bull" and "bear" are lost in time. "Bearish" may have originated from trading in pelts when bearskins were sold before the bears were caught. Bullbaiting and bearbaiting were also sports in the eighteenth century.)

long position
Owning assets for their income and possible price appreciation.

bullish
Expecting that prices will rise.

short position
Selling borrowed assets for possible price deterioration; being short in a security or a commodity.

bearish
Expecting that prices will decline.

If an investor expects a security's price to rise, the security is purchased. The investor takes a **long position** in the security in anticipation of the price increase. The investor is **bullish** because he or she believes that the price will rise. The long position earns profits for the investor if the price rises after the security has been purchased. For example, if an investor buys 100 shares of AB&C for $55 (i.e., $5,500 plus brokerage fees) and the price rises to $60, the profit on the long position is $5 per share (i.e., $500 on 100 shares before commissions).

Opposite the long position is the **short position (bearish)**, in which the investor anticipates that the security's price will fall. The investor who owns a stock may sell the security and hold cash or place the funds in interest-bearing short-term securities, such as Treasury bills or a savings account. Some investors who are particularly bearish or who are willing to speculate on the decline in prices may even "sell short," which is a sale for future delivery. (The process of selling short is discussed in the next section.)

Types of Orders

After an investor decides to purchase a security, a buy order is placed with the broker. Before entering an order, you should obtain a price quote. While your broker will provide a quote, bid and ask prices are readily available through the Internet. After typing in the ticker symbol, you will obtain bid and ask quotes and the price of the last trade.

(Be certain the quotes are current and not delayed prices!) You may request that your broker buy the security at the best price currently available, which is the asking price set by the market maker. Such a request is a **market order**. When you enter a market order, you are assured of an execution but not the price. The quoted price may change by the time the order is entered and executed. However, the order is generally executed at or very near the asking price.

market order
An order to buy or sell at the current market price or quote.

In addition to the price of the last trade and the bid and ask prices, you may receive additional information such as the volume of shares traded and the number of shares available at the bid and ask prices (referred to as the *order book*). This information may affect your investment strategy. For example, suppose the market maker is willing to purchase 700 shares at $10 and sell 300 shares at $10.05 and you want to purchase 1,000 shares. While a market order to buy 1,000 shares guarantees a purchase, you will not buy 1,000 shares at $10.05. Instead, you will purchase 300 shares at $10.05 and the remaining 700 shares will be bought at a higher price. To avoid this, you may enter an order to buy 1,000 shares "all or nothing" at $10.05 a share. While you may buy the shares for $10.05, you are not assured of having the order executed. In effect you must decide to accept the going price and buy the desired number of shares or specify the number of shares and their price ("all or nothing") but run the risk that the order will not be executed.

You may also enter a **limit order** and specify a price below the current asking price and wait until the price declines to the specified level. Such an order may be placed for one day (i.e., a **day order**), or the order may remain in effect indefinitely (i.e., a **good-till-canceled order**). Such an order remains on the books of the broker until it is either executed or canceled. If the price of the security does not decline to the specified level, the purchase is never made. While a good-till-canceled order may remain in effect indefinitely, brokerage firms generally have a time limit (e.g., one month or three months) that specifies when the order will be canceled if it has not been executed.

limit order
An order placed with a broker to buy or sell at a specified price.

day order
An order placed with a broker that is canceled at the end of the day if it is not executed.

good-till-canceled order
An order placed with a broker that remains in effect until it is executed by the broker or canceled by the investor.

After purchasing the security you may place a **stop order** to sell, which may be at a higher or lower price. Once the stock reaches that price, the stop order becomes a market order. An investor who desires to limit potential losses may place a stop-loss order, which specifies the price below the cost of the security at which the broker is authorized to sell. For example, if an investor buys a stock for $50 a share, a stop-loss order at $45 limits the loss to $5 a share, plus the commission fees for the purchase and the sale. If the price of the stock should fall to $45, the stop-loss order becomes a market order, and the stock is sold. (Since the order is now a market order, there is no assurance that the investor will get $45. If there is an influx of sell orders, the sale may occur at less than $45.) Such a sale protects the investor from riding the price of the stock down to $40 or lower. Of course, if the stock rebounds from $45 to $50, the investor has sold out at the bottom price.

stop order
A purchase or sell order designed to limit an investor's loss or to assure a profit on a position in a security.

The investor may also place an order above the purchase price. For example, the investor who purchases a stock at $50 may place a sell order at $60. Should the price of the stock reach $60, the order becomes a market order, and the stock is sold. Such an order limits the potential profit, for if the stock's price continues to rise, the investor who has already sold the stock does not continue to gain. However, the investor has protected the profit that resulted as the price increased from $50 to $60. In many cases, the investor watches the stock's price rise, decides not to sell, and then watches the price subsequently decline. Sell orders are designed to reduce this possibility.

The placing of sell orders can be an important part of an investor's strategy. For example, in the previous case the investor who purchased a stock at $50 may place sell orders at $45 and $60. If the price of the stock subsequently rises, this investor may change these sell orders. For example, if the price rises to $56 per share, the investor may change the sell orders to $52 and $64. This will preserve the capital invested, for the price of the stock cannot fall below $52 without triggering the sell order, but the price can now rise above $60, which was the previous upper limit for the sell order. By continuously raising the prices for the sell orders as the stock's price rises, the investor can continue to profit from any price increase and at the same time protect the funds invested in the security against price declines.

Because both limit orders and stop orders specify a price, they are easy to confuse. The limit order specifies a price at which a stock is to be bought or sold. (The purchase could be made at a lower price, and the sale could occur at a higher price.) Limit orders are filled in order of receipt. A limit order to buy stock at $10 may not be executed if other investors have previously entered purchase orders at that price. (Since individuals tend to think in terms of simple numbers such as $10 or $15, it may be a wise strategy to enter the buy order at $10.05, so that the order would be executed before all orders placed at $10. The same applies to sell orders. A limit to sell at $13 is executed once the stock price rises to $13 and prior sell orders are executed. A sell order at $12.90 stands before all sell orders at $13.)

A stop order also specifies a price. Once the price is reached, the order becomes a market order and is executed. Since the stop becomes a market order, the actual price at which it is executed may not necessarily be the specified price. For example, an investor buys a stock for $25 and enters a "stop-loss order" to sell at $20 to limit the possible loss on the stock. If the price declines to $20, the stop loss becomes a market order and stock is sold. As mentioned before, the investor may anticipate receiving $20, but there is no guarantee that the stock will be sold at that price. If, for example, the stock reported lower earnings and the price immediately dropped from $25 to $19, the stop-loss order would be executed at $19 instead of the specified $20.

If the investor were unwilling to accept a price less than $20, the individual could enter the sale order as a "stop-limit" order that combines a stop-loss with a limit order. However, the stock would not be sold if the price declined through the specified price before the limit order was executed. If, after the earnings announcement the price immediately dropped from $22 to $19, a stop-limit order at $20 would not be executed unless the stock subsequently rose to $20. With any limit order there is no assurance that the order will be executed. In other words, investors cannot have their cake and eat it too. Once the specified price is reached, a stop order guarantees an execution but not the price, whereas a limit order guarantees the price but not an execution.

confirmation statement
A statement received from a brokerage firm detailing the sale or purchase of a security and specifying a settlement date.

Once the purchase has been made, the broker sends the investor a **confirmation statement**, an example of which is shown in Exhibit 2.1. This confirmation statement gives the number of shares and name of the security purchased (100 shares of Clevepak Corporation), the unit price ($12.13) and the total amount that is due ($1,264.76). The amount that is due includes both the price of the securities and the transaction fees. The major transaction fee is the brokerage firm's commission, but there may also be state transfer fees and other miscellaneous fees. The investor has three business days after the trade date (the day the security is purchased—April 12, 201X) to pay the

amount that is due. The settlement date (the day the payment is due—April 15, 201X) is three business days after the trade date, and this time difference is frequently referred to as $T + 3$. The CUSIP in the confirmation statement (1667661) refers to the Committee for Uniform Securities Identification Procedures, which assigns a unique number for each security issue.

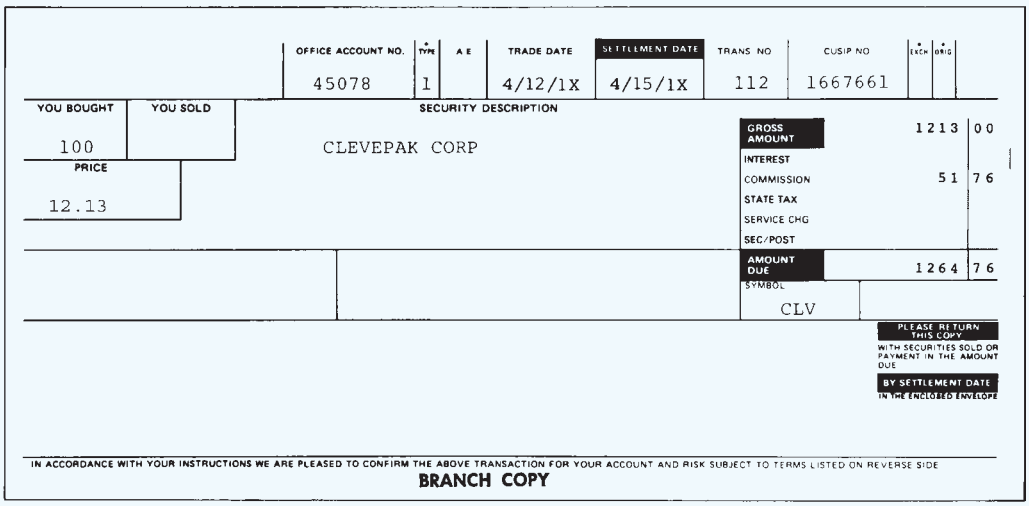
Cash and Margin Accounts

margin
The amount that an investor must put down to buy securities on credit.

The investor must pay for the securities as they are purchased. This can be done either with cash or with a combination of cash and borrowed funds. The latter is called buying on **margin**. The investor then has either a cash account or a margin account. A cash account is what the name implies: The investor pays the entire cost of the securities (i.e., $1,264.76 in Exhibit 2.1) in cash.

EXHIBIT 2.1

Confirmation Statement for the Purchase of 100 Shares of Clevepak Corporation



When an investor uses margin—that is, purchases the security partially with cash and partially with credit supplied by the broker—he or she makes an initial payment that is similar to a down payment on a house and borrows the remaining funds necessary to make the purchase. To open a margin account, the investor signs an agreement with the broker that gives the use of the securities and some control over the account to the broker. The securities serve as collateral for the loan. Should the amount of collateral on the account fall below a specified level, the broker can require that the investor put more assets in the account. This is called a *margin call*, and it may be satisfied by cash or additional securities. If the investor fails to meet a margin call, the broker will sell some securities in the account to raise the cash needed to protect the loan.

margin requirement
The minimum percentage, established by the Federal Reserve, that the investor must put up in cash to buy securities.

The **margin requirement** is the minimum percentage of the total price that the investor must pay and is set by the Federal Reserve Board. Individual brokers, however, may require more margin. The minimum payment required of the investor is the value of the securities times the margin requirement. Thus, if the margin requirement is 60 percent and the price of 100 shares is $1,000, the investor must supply $600 in cash and borrow $400 from the broker, who in turn borrows the funds from a commercial bank. The investor pays interest to the broker on $400. The interest rate will depend on the rate that the broker must pay to the lending institution.

Investors use margin to increase the potential return on the investment. When they expect the price of the security to rise, some investors pay for part of their purchases with borrowed funds. If the price rises from $10 to $14, the profit is $400. If the investor pays the entire $1,000, the percentage return is 40 percent ($400/$1,000). However, if the investor uses margin and pays for the stock with $600 in equity and $400 in borrowed funds, the investor's percentage return is increased to 67 percent ($400/$600). In this case, the use of margin is favorable because it increases the investor's return on the invested funds.

Of course, *if the price of the stock falls*, the reverse occurs—that is, *the percentage loss is greater*. If the price falls to $7, the investor loses $300 before commissions on the sale. The percentage loss is 30 percent. However, if the investor uses margin, the percentage loss is increased to 50 percent. Because the investor has borrowed money and thus reduced the amount of funds that he or she has committed to the investment, the percentage loss is greater. The use of margin magnifies both the potential return and potential percentage loss. Because the potential loss is increased, buying securities on credit increases the element of risk.

Determining the Percentage Return on a Margin Purchase, Including Commissions, Interest Paid, and Dividends Received

The previous section illustrated the potential magnification of the percentage return on a margin purchase versus a cash purchase. The example was an oversimplification because it excluded commissions, interest on any borrowed funds, and dividends received (if any). The following is a more complete illustration.

Assume the investor buys 100 shares of stock for $10 a share and sells it for $14. Also assume the margin requirement is 60 percent, the commission rate is 5 percent of the purchase or sale price, the interest rate is 10 percent, and the stock pays a dividend of $1.00 a share. The following illustrates the two positions:

	Cash	Margin
Sale price	$1,400	$1,400
Commission	70	70
Proceeds of sale	1,330	1,330
Loan repayment	0	420
Cash received	1,330	910
Dividends received	100	100
Interest paid	0	42

Percentage earned on the cash purchase:

$$\frac{\$1{,}330 + \$100 - \$1{,}050}{\$1{,}050} = 36.2\%$$

Percentage earned on the margin purchase:

$$\frac{\$1{,}330 - \$1{,}050 + \$100 - \$42}{\$630} = 53.7\%$$

Notice that the profit on the purchase and sale ($1,330 − $1,050) and the dividend payment are the same in both cases. The difference in the percentage earned is the result of having to pay interest ($42) and the fact that the investor only put up 60 percent of the funds ($630) and borrowed $420. It is the commitment of less than the full purchase price plus commissions and borrowing the balance that is the source of the magnification of the percentage return.

The percentage returns are also different from those in the simple illustration in the previous section. When commissions, interest, and dividends are included, the return on the all-cash investment is 36.2 percent versus 40 percent in the simplified illustration. The return on the margin investment is 53.7 percent instead of 67 percent because the commissions and interest consume part of the return.

Maintenance Margin

The margin requirement establishes the minimum amount the investor must deposit (and the maximum amount the investor may borrow) when purchasing a security. If the price of the stock subsequently rises, the investor's position improves because the amount borrowed as a proportion of the total value of the stock declines. If, however, the value of the stock falls, the investor's position deteriorates and the amount owed becomes a larger proportion of the value of the stock.

maintenance margin
The minimum equity required for a margin account. (The minimum level of funds required before a margin call.)

In order to protect the broker from the investor's default (not repaying the loan), a second margin requirement is established. This **maintenance margin** sets the minimum equity the investor must have in the position. If the stock's price declines sufficiently so that the investor violates the maintenance margin requirement, the investor receives a margin call and must advance additional funds or the broker will sell the stock and close the position. (Maintenance margin applies to the account as a whole. The investor receives a margin call when the value of the portfolio does not meet the maintenance margin requirement.)

Assume the maintenance margin requirement is 35 percent in the previous illustration. The initial margin requirement was 60 percent, so the investor paid $600 in cash (the investor's equity in the position) and borrowed $400 through the broker. If the investor's equity falls to below 35 percent, additional cash will be required. Suppose the price of the stock declines to $7, and the value of the stock is $700. Since $400 is owed, the investor's equity is $300, which is 42.9 percent of the value of the stock ($300/$700). Since 42.9 exceeds 35 percent, the investor is meeting the maintenance margin requirement. If, however, the price of the stock is $6, the investor's equity is $200—only 33.3 percent ($200/$600 = 33.3%) of the value of the stock. Since the maintenance margin requirement is 35 percent, the required margin is $210 (0.35 × $600).

The investor will receive a margin call and be required to commit an additional $10 to raise the equity to $210 and meet the maintenance margin requirement.

The price of the stock (P) that triggers a margin call is determined by Equation 2.1, in which B is the amount borrowed per share and MM is the maintenance margin requirement. In this illustration, the price that produces a margin call is

$$P = B/(1 - MM)$$
$$= \$4/(1 - 0.35) = \$6.15. \qquad 2.1$$

At $6.15 the investor's equity is $215 ($615 × $400), which is 35 percent of the value of the stock ($215/$615 = 0.35 = 35%). As long as the price of the stock remains above $6.15, the investor will not receive a margin call to commit additional cash to meet the maintenance margin requirement. As the previous discussion explains, margin accounts can increase the percentage returns on your investments. By borrowing some of the cost of an investment, you are able to leverage your returns. However, here are some realities that anyone who buys stock on margin should know.

1. The interest on the borrowed funds is a short-term rate that your broker sets, and the rate will increase with a general increase in interest rates.
2. While the Federal Reserve sets the minimum margin requirement, your broker can set a higher minimum rate and can raise that minimum rate without giving you advance written notice.
3. If you receive a margin call, the brokerage firm can determine which assets in your account will be sold to meet the margin call.
4. If you receive a margin call, you are not entitled to an extension of time.
5. It is possible to lose more funds than you deposit with the broker, and you are responsible for that additional loss.

In summary, the use of margin can magnify your return, but as the above points indicate, the use of margin increases your personal risk.

Delivery of Securities

street name
The registration of securities in a brokerage firm's name instead of in the buyer's name.

Once the shares have been purchased and paid for, the investor must decide whether to leave the securities with the broker or to take delivery. (In the case of a margin account, the investor *must* leave the securities with the broker.) If the shares are left with the broker, they will be registered in the brokerage firm's name (i.e., in the **street name**). The brokerage firm then becomes custodian of the securities, is responsible for them, and sends to the investor (usually electronically) a statement of the securities that are being held in the street name. The statement (usually monthly) also includes transactions and dividends and interest received. Some statements sent by brokerage firms include additional information such as the portfolio's asset allocation, year-to-date performance, cost basis of securities in the account, unrealized gains and losses, and dividends to be received.

The primary advantage of leaving securities with the brokerage firm is convenience, and the vast majority of investors have their securities registered in street name. Brokerage firms, however, cannot require the investor to leave the securities in the street name. (Some debt instruments, such as municipal bonds, are issued only as "book" entries. No certificates are created, so the "securities" must be registered in the

street name.) There is an important disadvantage to leaving the securities in the brokerage firm's name. If the brokerage firm fails or becomes insolvent, the investor may encounter difficulty in transferring the securities to his or her name and even greater difficulty in collecting any accrued dividends and interest. (The Securities Investor Protection Corporation [SIPC] has reduced the investor's risk of loss from the failure of a brokerage firm. SIPC is discussed later in this chapter.)

If the investor chooses to take delivery of the securities, that individual receives the stock certificates or bonds. Because the certificates may become negotiable, the investor may suffer a loss if they are stolen. Therefore, care should be taken to store them in a safe place such as a lock box or safe-deposit box in a bank. If the certificates are lost or destroyed, they can be replaced, but only at considerable expense in terms of money and effort. For example, the financial statements of Dominion Resources direct stockholders who lose certificates to write the transfer agent for instructions on how to obtain replacements. Bond is required to protect the stockholder and the transfer agent should the lost certificates return to circulation. The cost of the bond is 2 percent of the current market value (not the investor's cost) of the stock plus a processing fee.

The Cost of Investing

commissions
Fees charged by brokers for executing orders.

Investing, like everything else, is not free. The individual must pay certain costs, the most obvious of which are **commission** fees. There may also be transfer fees, and while these last expenses tend to be trivial, they can add up as the dollar value or the number of trades increases.

Commission costs may not be trivial, especially for small investors. Commission rates are supposed to be set by supply and demand, but in reality only large investors (e.g., financial institutions such as insurance companies or mutual funds) are able to negotiate commissions with brokerage firms. These institutions do such a large dollar volume that they are able to negotiate lower rates. For these institutions, the commission rates (as a percentage of the dollar amount of the transaction) may be small. Individuals, however, do not have this influence and generally have to accept the rate that is offered by the brokerage firm.

In general, commission rates are quoted in terms of round lots of 100 shares. Most firms also set a minimum commission fee (e.g., $50) that may cover all transactions involving $1,000 or less. Then, as the value of the 100 shares increases to greater than $1,000, the fee also increases. However, this commission fee as a percentage of the dollar value of the transaction will usually fall.

discount broker
A broker who charges lower commissions on security purchases and sales.

Some brokerage firms, known as **discount brokers**, offer lower commissions. (Full-service brokers may offer discounts, but the investor must ask for them. Receiving the requested discount will depend on such factors as the volume of trades generated by the investor.) Discount brokerage firms may not offer the range of services available through the full-service brokerage houses, but if the individual does not need these services, discount brokers help to reduce the cost of investing by decreasing commissions.

Investors may further reduce commission costs by trading online. Firms that offer this service charge substantially lower commissions. Individuals who feel comfortable

using online trading and who do not need regular brokerage services may be able to obtain substantial reductions in the cost of buying and selling securities.

Impact of the Spread on the Cost of Investing

Whereas commissions and other fees are explicit costs, there is also an important implicit cost of investing. This cost is the spread between the bid and the ask prices of the security. As was explained earlier in this chapter, the investor pays the ask price but receives only the bid price when the securities are sold. This spread should be viewed as a cost of investing. Thus, if an investor wants to buy 100 shares of a stock quoted 20–20.50, he or she will have to pay $2,050 plus commissions to buy stock that is currently worth (if it were to be sold) only $2,000. If the commission is $60 on purchases and sales, the cost of a round trip in the security (i.e., a purchase and a subsequent sale) is substantial. The total cost is illustrated in Exhibit 2.2. First, the investor pays $2,110 to buy the stock. If the stock is then sold, the investor receives $1,940. The total cost of this purchase and the subsequent sale is $170. Thus, the bid price of the security must rise sufficiently to cover both the commission fees and the spread before the investor realizes any capital appreciation.

EXHIBIT 2.2

Effect of the Spread on the Cost of Investing

Purchase price	Brokerage commission	Total cost
$2,050	$60	$2,110
Sale price	Commission	Total received
$2,000	$60	$1,940

Net loss (total cost minus total received = net loss)
$2,110 − $1,940 = $170

Another possible cost of investing is any impact on the price of the stock. If the portfolio manager of a mutual fund wants to buy (or sell) 50,000 shares of a stock, it is highly unlikely that this order can be filled without it affecting the stock's price. To fill the buy order, the market makers may have to raise the price to induce other investors to sell. This price effect may even apply to stocks that trade over a million shares daily. For stocks with only a modest number of shares outstanding, filling the order can certainly increase the price (or decrease it in the case of a sale). Any impact on the price of the security should be considered as a cost of investing.

To understand this potential cost, consider a market order to buy 600 shares of a small OTC stock with an asking price of $12. The total anticipated outlay is $7,200 (before commissions). The dealer, however, fills the order with 350 shares at $12 and 250 shares at $12.10 for a total outlay of $7,225. The $25 is an additional cost of buying the stock. The market was insufficiently deep to accept the market order without affecting the stock's price.

THE SHORT SALE

short sale
The sale of borrowed securities in anticipation of a price decline; a contract for future delivery.

How does an investor make money in the securities markets? The obvious answer is to buy low and sell high. For most people this implies that the investor first buys the security and then sells it at some later date. Can the investor sell the security first and buy it back later at a lower price? The answer is yes, for a **short sale** reverses the order. The investor sells the security first with the intention of purchasing it in the future at a lower price.

Because the sale precedes the purchase, the investor does not own the securities that are being sold short. Selling something that a person does not own may sound illegal, but there are many examples of such short selling in normal business relationships. A magazine publisher who sells a subscription, a professional such as a lawyer, engineer, or author who signs a contract for future services and receives an advance, or a manufacturer who signs a contract for future delivery are all making short sales. When your school collected the semester's tuition, it established a short position; it contracted for the future delivery of educational services. If the cost of fulfilling the contract increases, the short seller loses. If the cost declines, the short seller profits. Selling securities short is essentially no different: It is a current sale with a contract for future delivery. If the securities are subsequently purchased at a lower price, the short seller will profit. However, if the cost of the securities rises in the future, the short seller will suffer a loss.

The mechanics of the short sale can be illustrated by a simple example employing the stock of XYZ Inc. If the current price of the stock is $50 per share, the investor may buy 100 shares at $50 per share for a total cost of $5,000. Such a purchase represents taking a long position in the stock. If the price subsequently rises to $75 per share and the stock is sold, the investor will earn a profit of $2,500 ($7,500 − $5,000).

The short position reverses this procedure: The investor sells the stock first and buys it back at some time in the future. For example, an investor sells 100 shares of XYZ short at $50 ($5,000). Such a sale is made because the investor believes that the stock is *overpriced* and that the price of the stock will *fall*. In a short sale, the investor does not own the 100 shares sold. The buyer of the shares, however, certainly expects delivery of the stock. (Actually, the buyer does not know if the shares come from an investor who is selling short or an investor who is liquidating a position in the security.) The short seller has to *borrow* 100 shares to deliver to the buyer. The shares are usually borrowed from a broker, who in turn probably borrows them from clients who have left their securities with the broker. (Shares held in a margin account may be used by the broker, and one such possible use is to lend the shares to a short seller. However, shares left with the broker in a cash account cannot be lent to a short seller.)

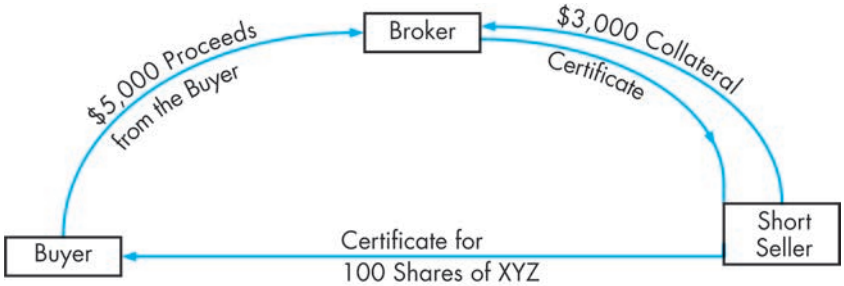
covering the short sale
The purchase of securities to close a short position.

Although the investor has sold the securities, the proceeds of the sale are not delivered to the seller but are held by the broker. These proceeds will be subsequently used to repurchase the shares. (In the jargon of securities markets such repurchases are referred to as **covering the short sale**.) In addition, the short seller must deposit with the broker an amount of money equal to the margin requirement for the purchase of the stock. Thus, if the margin requirement is 60 percent, the short seller in the illustration must deposit $3,000 ($5,000 × 0.6) with the broker. This money protects the broker (i.e., it is the short seller's collateral) and is returned to the short seller plus any

profits or minus any losses when he or she buys the shares and returns them to the broker. This flow of certificates and money is illustrated in Figure 2.1. The broker receives the money from the short seller (the $3,000 collateral) and from the buyer of the stock (the $5,000 in proceeds from the sale). The investor who sells the stock short receives nothing, but the borrowed securities flow through this investor's account en route to the buyer. The buyer then receives the securities and remits the funds to pay for them.

FIGURE 2.1

The Flow of Money and Certificates in Short Sale



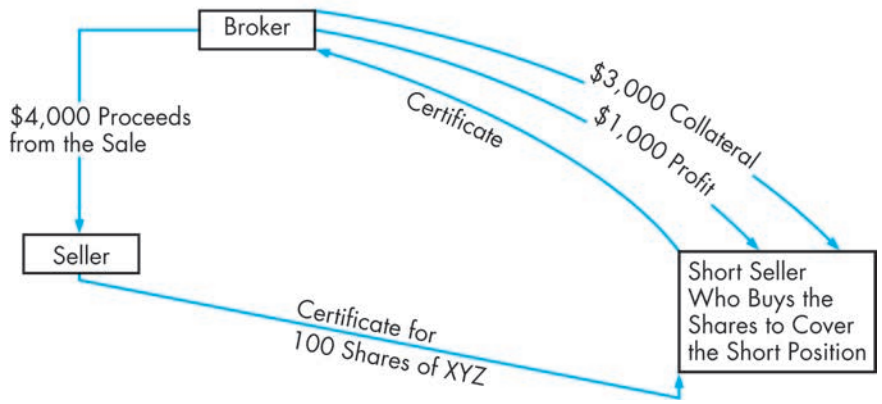
If the price of a share declines to $40, the short seller can buy the stock for $4,000. This purchase is no different from any purchase made on an exchange or in the over-the-counter market. The stock is then returned to the broker, and the loan of the stock is repaid. The short seller will have made a profit of $1,000 because the shares were purchased for $4,000 and sold for $5,000. The investor's collateral is then returned by the broker plus the $1,000 profit. These events are illustrated in Figure 2.2. The 100 shares of XYZ stock are purchased for $4,000 by the short seller. When the certificate for the 100 shares is received, it is returned by the short seller to the broker (who, in turn, returns the shares to whomever they were borrowed from). The broker returns the investor's $3,000 that was put up for collateral. Since the investor uses only $4,000 of the $5,000 in proceeds from the short sale to purchase the stock, the broker sends the investor the remainder of the proceeds (the $1,000 profit).

If the price of the stock had risen to $60 per share and the short seller had purchased the shares and returned them to the broker, the short position would have resulted in a $1,000 loss. The proceeds from the short sale would have been insufficient to purchase the shares. The short seller would have to use $1,000 of the collateral in addition to the proceeds to buy the stock and cover the short position. The broker would owe the short seller only what was left of the collateral ($2,000) after the transactions had been completed.

Although the previous transactions may sound complicated, they really are not. All that has occurred is that an investor has bought and sold a security. Instead of first purchasing the security and then selling it, the investor initially sold the security and subsequently purchased the shares to cover the short position. Because the sale occurred first, there is additional bookkeeping to account for the borrowed securities, but the transaction itself is not complicated.

FIGURE 2.2

The Flow of Money and Certificates When Covering a Profitable Short Sale



Unfortunately, many individuals believe that short selling is gambling. They believe that if investors sell short and the price of the stock rises substantially, the losses could result in financial ruin. However, short sellers can protect themselves by placing stop-loss purchase orders to cover the short position if the stock's price rises to a particular level. Furthermore, if these investors fail to place stop-loss orders, the brokers will cover the position for them once their collateral has shrunk and can no longer support the short position. In effect, the short seller receives a margin call. Thus, the amount that an investor can lose is limited to the required amount of margin.

While selling short generally involves no greater risk than purchasing stock, the possibility does exist that the price of the stock could rise dramatically and inflict large losses. Suppose an investor sold a stock short at $50 and the company subsequently became a takeover target with a price of $75. The price of the stock immediately jumps from $50 to $72.67 and sells for a small discount from the $75 takeover price. Since there were no trades between $50 and $72.67, the short seller is unable to cover until trading resumes at $72.67. In this possible scenario, the short seller could sustain a loss that exceeds the collateral necessary to meet the margin requirement.

Although the possibility exists for a large loss, short selling is basically consistent with a rational approach to the selection of securities. If an investor analyzes a company and finds that its securities are overpriced, the investor will certainly not buy the securities, and any that are currently owned should be sold. In addition, if the individual has confidence in the analysis and believes that the price will decline, the investor may sell short. The short sale, then, is the logical strategy given the basic analysis. Securities that are overpriced should be considered for short sales, just as securities that the investor believes are undervalued are the logical choice for purchase.

Short selling is not limited to individual investors; market makers may also sell short. If there is an influx of orders to buy, the market makers may satisfy this demand by selling short. They will then repurchase the shares in the future to cover the short position after the influx of orders has subsided. Frequently, this transaction can be profitable. After the speculative increase in price that results from the increased demand, the price of the security may decline. When this occurs, the market makers profit because they sell short when the price rises but cover their positions after the price subsequently falls.

The Short Sale and Dividends

You sell 100 shares of Southern Company short and the company subsequently pays a $0.35 quarterly dividend. The $35 dividend is sent to the individual who bought the 100 Southern shares, because that investor is the owner of record. However, the investor from whom you borrowed the Southern shares expects to receive the $35 dividend. Where does the money come from?

The answer is the short seller. The company is certainly not going to make two payments, so the short seller makes a payment equal to the dividend to the lender. The process is automatic. Your broker debits $35 from your account and credits the $35 to the account of the lender. While this transfer appears to be detrimental to the short seller, it is not. As is explained in Chapter 9 on dividends, the price of the stock adjusts downward for the dividend. You lose the $35 that you must pay but the value of the stock declines by $35. That's a wash and the short seller is neither better nor worse off as a result of the dividend payment.

Short-Interest Ratio

The short selling of a stock requires that the shares must eventually be repurchased. Such repurchases imply future demand for the stock, which may increase its price. Of course, the argument could be expressed in reverse. Increased short selling suggests that those in the know are anticipating lower stock prices. For either reason, some investors track short sales as a means to forecast price changes.

Such tracking requires obtaining data on short sales. The number of shares that have been sold short is referred to as the *short interest*. Since companies have differing amounts of stock outstanding, the absolute number of shares sold short may be meaningless. Instead, the number of shares short is often divided by the number of shares outstanding and expressed as the *short-interest* ratio. An alternative ratio considers the number of shares sold short relative to the average daily trading. If this ratio exceeds 1.0, that means more than one day's volume has been sold short. A ratio of less than 1.0 suggests the opposite: The average daily volume exceeds the number of shares sold short.

The numerical value of the short-interest ratio is easy to interpret. A ratio of 2.5 indicates that it will take 2.5 days of trading to cover (on the average) existing shorts. The implication of the ratio, however, is ambiguous. Does a higher ratio suggest that a stock's price will rise or fall? The answer to that question can be argued either way. A high numerical value implies that it will take several days for all the existing short positions to be covered. This future buying of the shares by the short sellers will drive up the price of the stock, so a high short-interest ratio is bullish. There is, however, an

exact opposite interpretation. A high short-interest ratio indicates that knowledgeable investors are shorting the stock in anticipation of a price decline. Thus, the high short-interest ratio is bearish and forecasts a declining stock price.

The number of shares sold short and the short-interest ratio are readily available. Data on the short interest may be found through Bloomberg and Yahoo!. Enter the ticker symbol, and click on key statistics for the individual firm. Depending on the investor's interpretation, an increase in the short-interest ratio suggests that short sellers will ultimately have to repurchase the shares or it suggests that investors are becoming more bearish and are selling the stock in anticipation of a price decline.

If an investor does sell short, there is always the possibility of being unable to repurchase the shares. Such a situation is referred to as a *short squeeze*. A short squeeze occurs when short sellers are unable to buy the stock to close their positions. This results in their bidding up the price as they frantically seek to buy the stock before its price rises further. Such a short squeeze is unlikely in a stock for which there are many shares outstanding and that actively trades. If, however, the stock has only a few shares publicly traded, the possibility does exist that short sellers will be unable to buy shares, which pushes up the price as the short sellers panic and bid increasingly higher prices to close their positions. (The short squeeze essentially applies to commodity markets. If the long positions can control the supply of the commodity, that is, obtain a monopoly or a "corner on the market" for the commodity, they can demand virtually any price from the shorts, who must pay in order to cover their positions.)

FOREIGN SECURITIES

Foreign companies, like U.S. companies, issue a variety of securities as a means to acquire funds. These securities subsequently trade on foreign exchanges or foreign OTC markets. For example, there are stock exchanges in London, Paris, Tokyo, and other foreign financial centers. Unless Americans and other foreigners are forbidden to acquire these securities, Americans can buy and sell stocks through these exchanges in much the same way that they purchase domestic U.S. stocks and bonds. Thus, foreign securities may be purchased through the use of U.S. brokers who have access to trading on these exchanges. In many cases, this access is obtained through a correspondent relationship with foreign securities dealers and brokerage firms.

The easiest way for American investors to acquire foreign stocks is to purchase companies such as Canon or Sony, whose shares are traded on a U.S. exchange or Nasdaq. (Foreign stock exchanges also list U.S. securities; the London Stock Exchange is the most liberal and actually encourages foreign listings.) American securities markets do not actually trade the foreign shares but trade receipts for the stock, called **American Depositary Receipts (ADRs)** or American Depositary Shares. These receipts are created by large financial institutions such as commercial banks. The ADRs are sold to the public and continue to trade in the United States.

American Depositary Receipts (ADRs)
Receipts issued for foreign securities held by a trustee.

There are two types of ADRs. *Sponsored* ADRs are created when the firm wants the securities to trade in the United States. The firm employs a bank to perform the paperwork to create the ADRs and to act as transfer agent. In this case, the costs are absorbed by the firm. All ADRs listed on the NYSE are sponsored ADRs. *Unsponsored*

ADRs are created when a brokerage firm believes there will be sufficient interest in a stock or bond to make a market in the security. The brokerage firm buys a block of securities and hires a commercial bank to create the ADRs and to act as transfer agent. However, fees for this service and for converting dividend payments from the foreign currency into U.S. dollars will be paid by the stockholders, not the issuing firm.

If there are no ADRs issued for the stock the investor wants to purchase, then the actual foreign securities will have to be acquired. The individual instructs the broker to purchase the foreign stock in the appropriate foreign market. As with any other security purchase, the shares or bonds are acquired through exchanges or OTC from dealers who make a market in the security. The trading practices followed by foreign exchanges need not coincide with U.S. practices. For example, after a stock is purchased, a settlement date is established at which time payment is due. This settlement date may not coincide with the U.S. practice of payment due after three business days. However, such differences are more a matter of detail than substance and are diminishing with increased global investing.

REGULATION

Like many industries, the securities industry is subject to a substantial degree of regulation from both the federal and state governments. Since the majority of securities are traded across state lines, most regulation is at the federal level.

The purpose of these laws is to protect the investor by ensuring honest and fair practices. The laws require that the investor be provided with information upon which to base decisions. Hence, these acts are frequently referred to as the **full disclosure laws**, because publicly owned companies must inform the public of certain facts relating to their firms. The regulations also attempt to prevent fraud and the manipulation of stock prices. However, they do not try to protect investors from their own folly and greed. The purpose of legislation governing the securities industry is not to ensure that investors will profit from their investments; instead, the laws try to provide fair market practices while allowing investors to make their own mistakes.

full disclosure laws
The federal and state laws requiring publicly held firms to disclose financial and other information that may affect the value of their securities.

Although current federal regulation developed during the 1930s as a direct result of the debacle in the securities markets during the early part of that decade, state regulations started in 1911 with the pioneering legislation in the state of Kansas. These state laws are frequently called *blue sky laws* because fraudulent securities were referred to as pieces of blue sky. Although there are differences among the state laws, they generally require that (1) securities firms and brokers be licensed, (2) financial information concerning issues of new securities be filed with state regulatory bodies, (3) new securities meet specific standards before they are sold, and (4) regulatory bodies be established to enforce the laws.

The Federal Securities Laws

The first modern federal legislation governing the securities industry was the Securities Act of 1933, which primarily concerns the issuing of new securities. It requires that new securities be "registered" with the SEC. As discussed previously, registration