
A Complete Guide to Investing



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Preface

In investing money, the amount of interest you want should depend on whether you want to eat well or sleep well.

J. Kenfield Morley, Some Things I believe

Before you can manage money to maximize your wealth you have to learn the basics about investing since you are a beginning investor. What is the difference between mutual funds and stocks? What is the difference between stocks or fixed income securities? How does appreciation in value differ from current fixed income? As a lay person, should you pick your own investments or should you let professional managers in mutual funds do it? Probably, as a beginning investor you should invest in mutual funds before investing directly in stocks or bonds. What investment style and comfort level is appropriate for you? What is a diversified investment portfolio and how can your assets be allocated?

Our level of discussion will be elementary since this is a basic investment reference for the beginner just learning how to invest for the first time. The book tells you what vehicles are available to invest in, the features of each type of investment, the advantages and disadvantages of each investment category, and when a particular investment type might be suitable for you.

This book covers investor objectives, security markets, security transactions, sources of investment information, appraisal of risk and return, financial analysis, tax deferred savings plans, investment strategies including active and passive (e.g., indexing), and retirement accounts. There is a thorough explanation of the investment selection process, basic investment terms, indicators, and statistics. Illustrations are given in a user friendly manner.

You may refer to this book when you need a basic definition or explanation of an investment topic, or your broker calls and suggests a new investment opportunity.

Successful investing is facilitated by obtaining the right information at the right

time. The investor should know where to obtain relevant information on specific investments, and how to read and interpret the various sources of data. Specific sources of investment information (publications, media outlets, etc.) are provided and you are guided on how to use these sources in making informed investment decisions.

This book can be used by the inexperienced investor to make everyday investment decisions. It contains easy to follow examples from daily life which show you step by step what has to be done to realistically achieve your objectives. This book is designed in a question and answer format in order to address the issues that come up when investing. The questions are typical of those asked by lay investors such as yourself. The answers are clear, concise, and to the point. In short, this is a workable easy reference of guidelines, illustrations, checklists, worksheets, charts, graphs, practical applications, recommendations, and how to's for you, the novice investor. Throughout, you'll find this book practical, quick, useful, and reader-friendly. Another important feature of the guide has to do with how to use a computer for investing. Computerized investing, which is a vital aspect of investing in this day and age, is stressed through the book.

The book helps you understand investments. Keep the book handy for easy reference when you want to invest and make money!

We cover every topic a basic investor might run up against. However, advanced topics probably not appropriate for the lay person are limited to a very brief discussion or a definition in the glossary.

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Jae K Shim

Dr. Jae K. Shim is a professor of accounting and finance at California State University, Long Beach and CEO of Delta Consulting Company, a financial consulting and training firm. Dr. Shim received his M.B.A. and Ph.D. degrees from the University of California at Berkeley (Haas School of Business). Dr. Shim has been a consultant to commercial and nonprofit organizations for over 30 years.

Dr. Shim has over 50 college and professional books to his credit, including, *Barron's Accounting Handbook*, *Barron's Dictionary of Accounting Terms*, *2010 GAAP: Handbook of Policies and Procedures*, *Strategic Business Forecasting*, *Management Accountant's Standard Desk Reference*, *Analysis and Uses of Financial Statements*, *Budgeting Basics and Beyond*, *2010-2011 Corporate Controller's Handbook of Financial Management*, *US Master Finance Guide*, *Uses and Analysis of Financial Statements*, *Investment Sourcebook*, *Dictionary of Real Estate*, *Dictionary of International Investment Terms*, *Dictionary of Business Terms*, *The Vest-Pocket CPA*, *The Vest-Pocket CFO*, and the best-selling *Vest-Pocket MBA*.

Thirty of his publications have been translated into foreign languages such as Chinese, Spanish, Russian, Polish, Croatian, Italian, Japanese, and Korean. Professor Shim's books have been published by CCH, Barron's, John Wiley, McGraw-Hill, Prentice-Hall, Penguins Portfolio, Thomson Reuters, Global Professional Publishing, American Management Association (Amacom), and the American Institute of CPAs (AICPA).

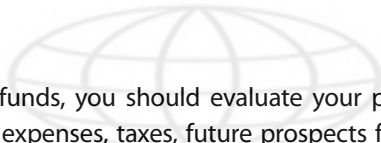
Dr. Shim has also published numerous articles in professional and academic journals. He was the recipient of the Financial Management Association International's 1982 Credit Research Foundation Award for his article on cash flow forecasting and financial modeling.

Dr. Shim has been frequently quoted by such media as the *Los Angeles Times*, *Orange County Register*, *Business Start-ups*, *Personal Finance*, and *Money Radio*. He also provides business content for mobile learning apps to iPhone, iPod, iPad, Blackberry, Android, Droid, and Nokia.



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Getting Started as an Investor



Before you invest any funds, you should evaluate your present financial condition. Consider your income, expenses, taxes, future prospects for higher earnings, and all other details that affect your monetary situation. Decide how much you want to invest. Then very carefully formulate your investment aims. Will you invest in order to earn a profit? As a hedge against economic fluctuations? To build up a retirement income? To prepare for your children's college fund?

Your next step should be to examine the investment choices presented in this book and then decide which kinds of investments are best for you.

Set up your long-term goals first, thinking in terms of the middle and distant future. Then establish short-term financial objectives that are consistent with the longer-term aims. After six months or a year, if you haven't been able to meet your short-term goals, you may have to reevaluate the long-term objectives. If, however, you have done much better than you expected to do, you may want to formulate more ambitious goals.

What are the sources of money for investing?

Here are the possible sources of money available for investing.

- ▶ *Discretionary income.* After-tax income left after spending.
- ▶ *Life insurance.* Amount of cash value to be borrowed against policy.
- ▶ *Gift* from your parent or rich uncle.
- ▶ *Profit sharing and pension.* Amount of pension that may be borrowed against at a low interest.

- ▶ *OPM* (other people's money).
- ▶ *Home equity loan or equity line.*

What are the types of investments?

Fixed-income and variable income investments

Investments can be classified into two forms: *fixed-income* and *variable-income*. Simply stated, *fixed-income investments* promise you a stated amount of income periodically. These include corporate bonds and preferred stocks, U.S. government securities (Treasury bills), municipal bonds, and other savings instruments (savings account, certificate of deposit).

On the other hand, *variable-income investments* are those whereby neither the principal nor the income is contractually set in advance in terms of dollars. That is, both the value and income of variable-income investments can change in dollar amount, either up or down, with changes in internal or external economic conditions. These include common stocks, mutual funds, real estate, and variable annuities.

Financial assets versus real assets

Investments can be viewed as *financial* or *real assets*. *Financial assets* refer to intangible investments – things you cannot touch or wear or walk on. They are your equity interest in a company, or evidence of money owed to you, or a right to buy or sell your ownership interest. *Real assets* have tangible, physical substance. Table 1.1 lists the various forms of financial and real assets.

Table 1.1: Overview of investment vehicles

FINANCIAL ASSETS		REAL ASSETS	
1.	Equity claims – direct		
	Common stock		
	Options, rights, and warrants		
		1.	Real estate
2.	Equity claims – indirect		
	Mutual funds		
		2.	Precious metals and gems
3.	Creditor claims	3.	Collectibles

FINANCIAL ASSETS	REAL ASSETS
Savings accounts and certificates of deposits (CDs)	
Treasury bills	
Money market funds	
Commercial paper	
Corporate and government bonds	
4. Preferred stock	
5. Commodities and financial futures	
6. Annuities - variable and fixed	

Direct and indirect investments

An investment can be *direct* or *indirect*. When you make a *direct* investment, you acquire a claim on a particular investment vehicle such as a stock or bond. When you choose an *indirect* investment, you have a portfolio of stocks, bonds, or properties. A popular indirect investment is share of a mutual fund, which holds a portfolio of securities issued by mutual fund investment companies, or share of Real Estate Investment Trusts (REITs). You can have a portfolio of securities representing diversified investment types. This variety of investments minimizes risk while bringing in a satisfactory return.

Long-term and short-term investments

An investment may be *short-term* or *long-term*.

Short-term investments last for one year or less. A short-term investment might be a 3-month Treasury bill. Short-term securities involve little risk and offer liquidity. They include the liquid investments listed earlier in this chapter: savings accounts, certificates of deposit, money market certificates, mutual funds, U.S. Treasury bills, and commercial paper.

Long-term investments last more than one year. A long-term investment might be a 5-year Treasury note. Some long-term investments do not mature, such as equity securities. However, you can buy a long-term investment and consider it as a short-term one by disposing of it within one year. Long-term securities are debt or equity instruments with a maturity of more than one year. A debt instrument is a certificate or security showing that you loaned funds to a company or to a government in return for future interest and repayment of principal. Equity securities are ones you have ownership interests in.

How many of your investments are short-term? How many are long-term? Is that the combination you consider best for you?

What are the features of bonds?

Bonds are one type of debt instrument – a certificate of corporate or government obligation to you in return for your loan (investment). Bonds are usually sold in \$1,000 denominations. You can purchase or sell a bond before maturity at a price other than face value. The bond indenture specifies the terms of the borrowing arrangement. Many bonds are callable at the command of the issuing company. This means that the issuing firm can buy back the debt prior to maturity.

The interest you receive on a bond equals the nominal interest rate times the face value. Suppose, for example, that you buy a ten-year \$40,000 bond at 8% interest. You pay 94% of face value. Interest is payable semiannually, which is typical. The purchase price is \$37,600 (94% X \$40,000). You receive a semiannual interest payment of \$1,600 (4% X \$40,000). At maturity, you will receive the full maturity value of \$40,000.

Corporate bonds are riskier than government bonds because companies can fail. Most individuals in high tax brackets do not find corporate bonds attractive because interest received is fully taxable.

U.S. government obligations include Treasury notes and Treasury bonds. Treasury notes are U.S. obligations having a maturity from two to ten years. The yield is slightly higher than on treasury bills. Treasury bonds are long-term obligations for over ten years. They usually pay a higher interest rate than do Treasury notes. The risk default is nonexistent.

The interest on local (state and city) bonds is exempt from federal and local taxes. However, to be free from state tax you must buy bonds issued by your home state. For example, interest on California state bonds is exempt from California state tax, but interest on New York bonds is not exempt from California state tax. Municipal bonds appeal to high-tax-bracket investors because the interest received is tax free. If you are in a high tax bracket, you should consider buying municipal bonds.

Zero-coupon bonds do pay interest (a coupon) but are traded at a deep discount, rendering profit at maturity when the bond is redeemed for its full face value. They can be risky, but of some interest to longer-term investors. For example, let's say you buy a zero-coupon bond with a \$1,000 par value and 10 years to maturity and is trading at \$600; you'd be paying \$600 today for a bond that will pay you \$1,000 in 10 years.

What are the features of common stocks?

By buying common stock, you obtain an equity interest in a business. An equity investment is ownership in a business (evidenced by a security) or property (evidenced by title). Equity securities have no maturity date. You purchase them in order to receive income (dividends) and capital gain. Two types of stock are *common* and *preferred*.

Common stock is an equity investment reflecting ownership in a company. If you hold 10,000 shares of common stock in a firm that has 100,000 shares outstanding, you own a 10% ownership interest in that company.

Here are some of the advantages of owning common stock:

- ▶ It is an inflation hedge.
- ▶ You can vote.
- ▶ If the company does well, your stock price will appreciate and your dividends will increase.

Owning common stock also carries disadvantages, however. These disadvantages include the following:

- ▶ When the firm isn't thriving, your earnings will drop and price stability will suffer, meaning that the stock's resale value will decrease.
- ▶ You may not receive sizable dividends.
- ▶ Common stock is riskier than debt securities and preferred stock, since you will be the last to receive money if the company fails. (Debt holders come before equity holders in liquidation, and in this instance you are an equity holder.)

Common stock owners have the preemptive right, which allows them to maintain their proportionate share in the company. Thus, they can buy new shares issued before they go on sale to the general public. This way they can maintain their percentage of ownership.

Preferred stock holders have no voting rights, but they do receive a fixed dividend rate. They also take precedence over common stock holders in the receipt of dividends and in the event of liquidation. Preferred stock may be callable at the company's option, and it generally provides only dividend income, with no capital gain potential. See Table 1.2 for a comparison of securities – debt instruments, preferred stock, and common stock.

Table 1.2: Comparison of securities

	DEBT	PREFERRED STOCK	COMMON STOCK
Voting rights	No	No	Yes
Risk	Low	Medium	High
Appreciation in value of company	No	Yes	Yes
Fixed annual return	Yes	Yes	No

	DEBT	PREFERRED STOCK	COMMON STOCK
Partial tax exclusion for interest or dividends	No	Yes	Yes
Fixed maturity date	Yes	Yes	No

What are the types of dividends?

Dividends may be in the form of *cash* or *stock*. Cash dividends are taxable. They are usually paid quarterly. If a stock dividend differs from the security receiving the dividend (in other words, if you own common stock but get a preferred stock dividend), you must pay taxes on the dividends you receive. If they are the same (in other words, if you own common stock and get common stock dividends), you do not pay taxes on those dividends. You can look up the dividend records and ratings of companies in *Standard and Poor's Stock Guide*.

What are convertible securities?

Convertible securities are those that can be converted into common stock at a later date. Two examples of these securities are convertible bonds and convertible preferred stock. These securities give you fixed income in the form of interest (convertible bonds) or dividends (convertible preferred stocks). They also let you benefit from the appreciation value of the common stock.

What are derivative products?

Options and *futures* are derivative products. Their value is derived from the underlying security. Options and futures are also *leverage*-inherent investments that can be used to increase potential return or to reduce risk.

An *option* is the right to buy a security or property at a given price during a specified time period. An option is neither a debt nor equity; it is an opportunity to acquire securities. You might buy options in order to take advantage of an anticipated change in the price of common stocks. You should know, however, that you, as an option holder, have no guaranteed return; the option may not be attractive to exercise, because the market price of the underlying common stock has not increased, for example, or the option time period may elapse. If this happens, you will lose your entire investment. Hence, options involve considerable risk.

Commodity and financial *futures* are seller commitments to deliver a specific commodity or financial instrument at a set price by a given date. The profitability of these investments depends on many uncontrollable factors linked to the world economy. Therefore, futures are high-risk investments.

What is the difference between common stocks and mutual funds?

A mutual fund is a diversified group of stocks, bonds, or other assets contributed by investors and managed by professional money managers. The primary appeal of mutual funds is that they are professionally managed and provide diversification. Table 1.3 spells out the difference between stocks and mutual funds.

Table 1.3 : Difference between stocks and mutual funds

	STOCKS	MUTUAL FUNDS
Ownership	Shares of a single company	Shares in the fund; fractional ownership of a group of assets
Voting rights	Yes	No
Value	Per share price	Net asset value (nav)
Professional management	No	Yes
Diversification	No	Yes
Liquidity	3 business days	Almost immediate
Dividends and capital gains	Direct	Can be reinvested
Investment decision by	Yourself	Fund manager
Choice of investment goals	No	Yes
Accessibility	Via broker	Yes; via a toll-free phone
Flexibility	No	Yes; exchange privileges; check-writing services
Commission	Full or discount	Load or no-load

What other types of investments exist?

There are many other forms of investments. Some are real assets such as real estate, precious metals and gems, and collectibles. Some are tax-advantaged investments

whose income grows tax-deferred. They include Individual Retirement Accounts (IRAs), Keoghs, and annuities. Limited partnerships provide tax shelters with passive participation and limited liabilities.

What are the factors to be considered in investment decisions?

Your financial situation and future expectations are essential in formulating an investment strategy. Consideration should be given to return and risk, stability of income, tax factors, and marketability and liquidity.

Return and risk

The primary purpose of investing is to earn a return on your money in the form of: interest, dividends, rental income, and capital appreciation. However, increasing total returns would entail greater investment risks. Thus, yield and degree of risk are directly related. Greater risk also means sacrificing security of principal. You have to choose the priority that fits your financial circumstances and objectives.

Stability of income

When a steady income is the most important consideration, you may opt for high-yielding stocks. If you are searching for capital appreciation, you may look toward smaller, emerging growth stocks.

Tax factors

Investors in high tax brackets will have different investment objectives than those in lower brackets. If you are in a high tax bracket, you may prefer municipal bonds (interest is not taxable), or investments that provide tax credits or tax shelters, such as those in oil and gas.

Marketability and liquidity

This means the ability of an investment to find a ready market to dispose it at the right price. It is safer to invest in liquid assets than illiquid ones because it is easier for you to get your money out of the investment. Examples of investments that are easily converted into cash include blue chip and money market securities.

In addition, there are many other factors to be considered as they relate to a specific situation, including:

- ▶ Current and future income needs - funds for college education or retirement
- ▶ Level of risk tolerance - conservative, neutral, or speculative
- ▶ Capacity for risk - ability to withstand financial losses
- ▶ Amount of investment (for example, some real estate investment trusts (REITs) require a \$5,000 minimum investment)
- ▶ Hedging against inflation (for example, fixed-income securities are vulnerable to inflation)
- ▶ Ease of management (for example, mutual funds save management and bookkeeping troubles)
- ▶ Diversification (for example, you can enjoy owning many investment vehicles through a mutual fund)

In the beginning, look for liquid investments that provide a good return (high interest or dividends) and are at the same time immediately salable. That's what liquid means: that you can sell the investment quickly in case you need the money for another, more important purpose. Here are some popular liquid investments:

- ▶ Certificates of deposit
- ▶ U.S. Treasury bills (T-bills)
- ▶ Money market certificates
- ▶ Mutual funds
- ▶ Savings accounts
- ▶ Commercial paper

Liquidity is not your only consideration. You must also take into account the return you will receive on an investment, especially in relation to its risk. The higher the risk, the higher the return should be; this is an unfailing rule of the investor.

Income on investments comes in one of three forms:

- ▶ Ordinary income: interest or dividends
- ▶ Short-term capital gain: the profit you earn when you sell an investment you've held for one year or less
- ▶ Long-term capital gain: the profit you earn when you sell an investment you've held for longer than one year.

What tax aspects should you consider when investing?

Your tax situation will affect your investment choices. Many people in the lower-income tax brackets choose to invest for the purpose of increasing ordinary income,

which is fully taxable. Those in higher-tax brackets, however, often choose long-term investments because they carry certain tax advantages.

Here is a look at the way some securities are taxed:

- ▶ Ordinary income (interest and dividends) is fully taxable.
- ▶ Short-term capital gain is fully taxable.
- ▶ Whole long-term capital gain is taxable but at 15%.
- ▶ Income on U.S. government securities is subject to federal income tax but exempt from state and city taxes.
- ▶ Income from municipal securities (issued by your state or city) is exempt from both federal and local taxes.
- ▶ IRAs and Keogh plans provide taxable income when payments are received after retirement. Prior to retirement, interest income earned on the accounts is accumulated in the fund and is nontaxable.

What are the drawbacks and benefits of buying municipal bonds?

Now we will look more closely at some of these investments. Municipal securities, for example, look good in the list above because of the tax benefit. There is a slight catch, however. These investments usually have a long maturity period; in other words, you have to tie up your money for several years before you receive your profit. They are nevertheless attractive to some investors, depending on their tax bracket. An investor in the combined federal and state 40% bracket, for example, may hold municipal securities that provide a 10% return. This person will receive a before-tax return of 16.7% calculated as follows:

$$\frac{10\%}{1 - \text{Tax Rate}} = \frac{10\%}{1 - .4} = \frac{10\%}{.6} = 16.7\%$$

Tax-exempt municipal securities, tax-deferred investments, and tax shelters such as limited partnerships are attractive to high-tax-bracket investors.

What about retirement?

Retired people generally favor safe investments that provide fixed yearly returns. Appreciation in the price of a security is not as important to retirees as a stable, guaranteed income. For example, a long-term government bond will satisfy most retirees' needs. Risky investments are not desirable because of the uncertainty.

You have to plan for sufficient income during your retirement. In addition to Social Security and your job's pension plan, you can invest in annuities and self-sponsored retirement plans like IRAs and Keoghs. You can deposit as much as \$4,000 a year in

an IRA, the income from which is nontaxable. If you are self-employed, or if you earn significant income from self-employment in addition to your salaried job, you can deposit up to 25% of that part of your income in a Keogh Plan, which is also nontaxable. However, payments you receive from the fund after retirement are taxable.

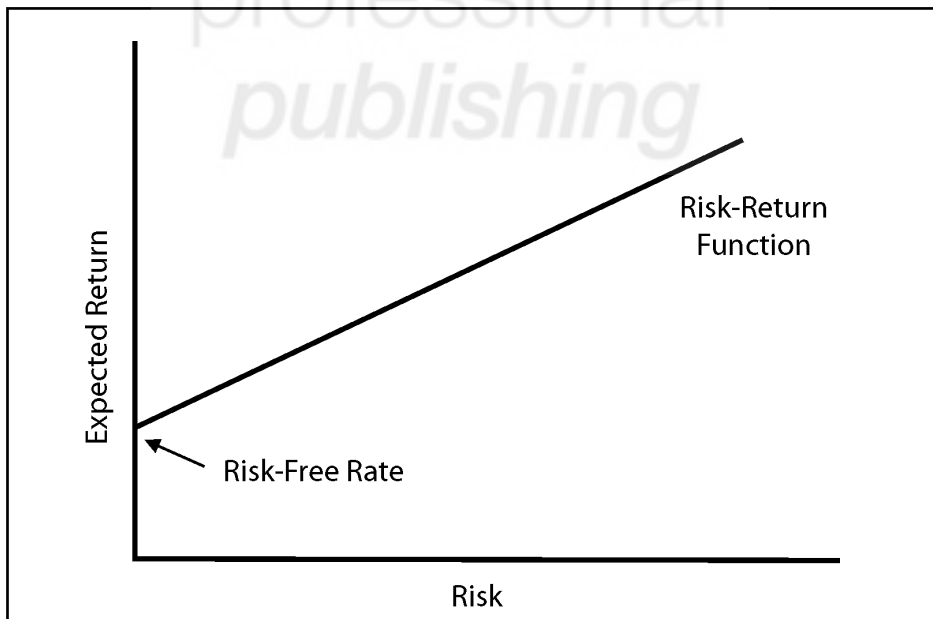
How are capital losses treated for tax purposes?

We discussed capital gain earlier and the conditions under which it is taxable. How about capital loss? This loss is the negative difference between the price you pay for an investment and the price you receive for it when you sell it. In other words, if you buy ten shares of a certain stock for a total of \$500 and later sell those shares for \$350, you take a capital loss of \$150. You can deduct capital losses in full up to \$3,000. If your losses exceed \$3,000, you can carry the excess forward to the succeeding years.

How do risk and return relate?

How much financial risk should you be willing to take on an investment? Risk is the chance you take of losing money on an investment; it is the uncertainty regarding the investment's final payoff. The more an investment can vary in value during the maturity period, the greater the risk you take when you buy and hold on to it.

Figure 1.1: Risk chart



All investments involve some degree of risk. In general, you will have to find a balance between risk and return; the higher the risk, the greater must be the return. Figure 1.1 illustrates a risk-return tradeoff.

What is the difference between a marketable investment and a liquid investment?

Marketability is different from liquidity. *Marketability* means there is an available market to sell the investment. *Liquidity* means marketability exists and the market price is stable.

Liquidity is important if you may need money right away, such as for an emergency. However, liquid investments usually provide a lower return than non-liquid ones. Liquid investments include savings accounts and money market funds.

Table 1.4 shows marketability and liquidity for various investments.

Table 1.4: Investment marketability and liquidity

	MARKETABILITY	LIQUIDITY
Savings accounts	Not applicable	High
Corporate bonds	High	Medium
Short-term u.s. government securities	High	High
Long-term u.s. government securities	High	Medium
Common stock	High	Low
Real estate	Medium	Low

How do interest rates affect the market value of your investment?

Bonds are responsive to changes in interest rates. When interest rates increase, bond prices decrease. If you paid \$1,000 (par) for a bond that paid 7%, or \$70 interest per annum, and then interest rates increased so that newly issued bonds were paying 9%, or \$90 interest, no one would desire to purchase your bond for \$1,000. Why would anyone take 7% if that person could get 9%? The price of your bond would have to

drop so someone might buy it at a discount (less than \$1,000), so he could make a profit on the lower price paid and receive \$1,000 at maturity.

Stocks are sensitive to interest rate changes. For example, as interest rates increase, stock prices also tend to decrease because:

- ▶ Dividends are less attractive, prompting stock sales.
- ▶ It is more expensive to purchase stock on margin (credit), depressing investment in stocks.
- ▶ Higher interest rates result in higher borrowing costs for companies, resulting in lower profits.

What are the expenses associated with your investments?

You might want to take into account investment expenses associated with various investment instruments, because they do vary widely. Table 1.5 summarizes investments requiring high and low expenses.

Table 1.5: Investments requiring high and low expenses

HIGH-EXPENSE INVESTMENTS	LOW-EXPENSE INVESTMENTS
Over-the-counter (OTC) and inactive stocks	▶ No load mutual funds
Load mutual funds	▶ Actively traded stocks and bonds
Unit investment trusts	
Zero coupon bonds	
Limited partnerships	
Collectibles	
CDs, if withdrawn before maturity	

Note: You should consider using discount brokers unless you need investment advice. There are substantial savings in commissions. Also, buy in volume to obtain discounts. For example, as you increase the number of shares bought, the brokerage commission per share drops. The greater the dollar purchase of a Treasury bill, the less the commission. If you buy a \$50,000 or more Treasury bill, there is a minimal commission. The smaller the purchase, the greater the per share commission rate.

How aggressive – or conservative – should you be?

Aggressive investing seeks to obtain the highest return at above-normal risk. Conservative investing seeks to minimize risk but generate less return. An aggressive strategy involves more trading. A defensive strategy holds for the long term.

Aggressive investments include buying securities on margin (credit) to use leverage to maximize return. Conservative investments do not normally use credit (or leverage). Aggressive investing may involve a few securities at one time seeking high return but it is risky. Sometimes the more you invest in one item the higher the return, such as a jumbo certificate of deposit. Diversification—spreading your funds among various securities—is a conservative policy.

How aggressive or conservative you should be depends on a number of factors, including your risk profile and investment goals. For example, retirees want safety and constant annual returns. Appreciation is not as essential as stable, guaranteed income. Risky investments have uncertainty.

Steps in investment planning

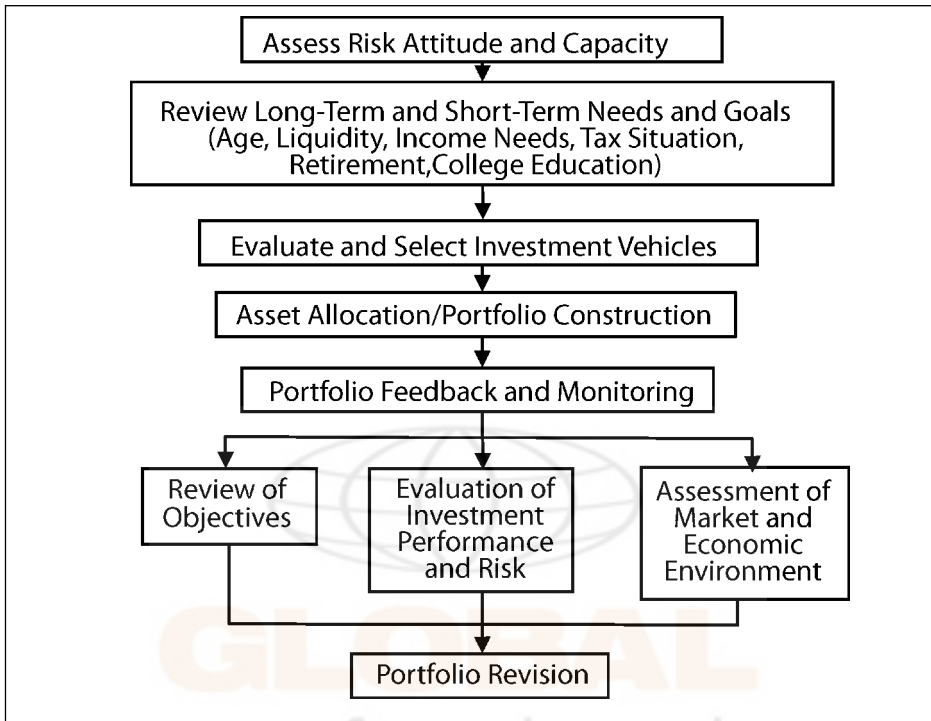
In a broad sense, investment planning involving constructing and monitoring an investment portfolio. This requires a systematic approach that follows a series of steps, as indicated in Figure 1.2.

First, you, as an investor, must determine the risk level you are willing to take and your capacity for risk. It depends to a great extent on your stage in the life cycle. For example, the younger you are, the more risk you can afford to assume.

The next step is to determine your investment objectives, such as liquidity, current income versus capital growth, tax exposure, college funding, and retirement planning. These variables dictate your choice of investment vehicles. The need for adequate diversification must be considered when types of investments are selected.

Next, the resulting portfolio is periodically evaluated and monitored to determine if it is achieving your investment objectives in accordance with the changing market and economic environment. If it is not, a portfolio revision is in order. The revision may be based on changes in your investment status, such as tax brackets, and might include selling some assets and purchasing others. Investment planning should be an on-going process within a well-conceived risk-return framework.

Figure 1.2: Steps in investment planning



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Financial Markets and Investment Process

Suppliers and buyers of funds make their investment transactions in financial markets. Financial markets consist of the money market and the capital market. In the money market, short-term debt securities with a life of one year or less are bought and sold. Transactions in long-term securities like stocks and bonds are made in the capital market, which is composed of several security exchanges.

What are the capital markets?

Capital markets are either primary or secondary. In the primary market, new shares are issued to the public. A new security issuance usually involves an investment banking firm that specializes in selling new security issuances for compensation. In large issues, the investment bankers act as stockbrokers that sell a percentage of the issue. The lead investment banker is the originating house, and all other investment bankers are the syndicate.

The secondary market is where securities are traded after original issuance, when the original holders sell their shares to other buyers. The secondary markets include the organized security exchanges-New York, American, and regional-and the over-the-counter market. These organized exchanges serve as clearinghouses for those who supply securities and those who demand them. The listing requirements for companies on the New York Stock Exchange are more restrictive than those for the other exchanges.

“Listed” securities are traded on the organized exchanges. Trading is done on the floor of the exchange by members who are for the most part brokerage firms. Brokers bring together the buyer and seller of a stock. The New York Stock Exchange accounts for about 80% of the total volume of shares traded on organized exchanges. Regional

exchanges include the Pacific Stock Exchange, which is an auction market, and the Philadelphia Stock Exchange.

What Is the over-the-counter market?

On organized exchanges such as the New York Stock Exchange, designated members hold seats that are bought for large amounts. The *over-the-counter* (OTC) market is the market characterized by trading through a broker-dealer without using the facilities of an exchange. Although it is not an auction market, it does provide a forum where new unlisted issues are sold. Traders (dealers) use a telecommunications network called the *National Association of Security Dealers Automated Quotation System* (NASDAQ) for transactions in these securities. The over-the-counter market trades a higher dollar volume of securities than do the national and regional exchanges.

Each over-the-counter trader makes a market in certain securities by offering to buy or sell them at specified prices. Dealers are the second party to a transaction. The bid price is the maximum price the dealer offers for a security. The ask price is the lowest price for which the dealer will sell the security. This is the price an individual investor will pay to purchase a stock in the OTC market. The dealer's profit is the spread—the difference between the bid price and the ask price.

What are the advantages of purchasing stocks in the over-the-counter market?

- ▶ Some securities are traded only in this market.
- ▶ Some securities have significant potential for return but with high risk.
- ▶ Over-the-counter dealers have the excellent communications network known as NASDAQ, which results in a high degree of marketability for their stocks and a better reflection of true price.

The disadvantage of buying on the over-the-counter market is that the companies whose stocks are sold there are generally lower-quality firms than those listed on the New York Stock Exchange and the American Stock Exchange.

Some listed New York Stock Exchange securities are traded on the over-the-counter market. These transactions constitute the third market. The fourth market comprises the trading of securities between institutions without the use of middlemen. Especially large issues are traded on this fourth market.

What about the futures market?

Future contracts for future delivery of a commodity or financial instrument at a given price for a specified time period are traded on several exchanges, principally the *Chicago Board of Trade*. This exchange has the most comprehensive listing of commodities and financial future contracts. Other future exchanges exist, some of which specialize in particular commodities. Futures in foreign currency are primarily traded on the *International Monetary Market*, which is part of the *Chicago Mercantile Exchange*.

What do security transactions involve?

Before you invest, you should learn the procedures for acquiring an investment, the associated costs, the characteristics of your chosen investment, and the advantages and disadvantages of alternative investment opportunities.

Stockbrokers can buy and sell securities for you. They also provide price quotations and other investment information, and they will give you stock and bond guides that explain and summarize the activity of securities.

Stockbrokers work for the brokerage houses that own seats on the organized exchanges. Members of the exchange execute orders placed by their brokers. Orders for over-the-counter securities are carried out by dealers who specialize in certain securities. Regardless of which market your security is being sold in, you have to place your order with a broker. He or she will send you a monthly statement listing the stocks you bought and sold, the commission fees you've paid your broker, the interest charges, your dividend and interest income, and your final balance.

You have the option to hold stock or bond certificates in your own name, or allow a brokerage firm to hold them in the firm's "street name." If the firm holds on to certificates, the broker can sell them without having to get your signature. If you hold certificates in your own name, you can participate directly in a company's dividend reinvestment program without paying brokerage commissions.

Some of the major brokerage firms are Merrill Lynch, Fidelity, and Goldman Sachs.

Here are the different types of brokerage accounts from which you can choose:

1. *Single or Joint.* Are you single or married?
2. *Cash.* You must make full payment for securities purchased within three business days. When you sell your securities, the brokerage house has three days to give you your money.
3. *Margin.* You make partial payment for securities purchased, with the remainder on credit. The broker retains the securities as collateral.
4. *Discretionary.* You give your broker permission to buy and sell securities at his or her discretion.

What are the types of securities transactions?

Types of securities transactions include:

1. *Long purchase.* You buy a security expecting it to increase in value (buy low and sell high). Your return will come in the form of dividend and interest income over the maturity period plus capital gain at the time of sale minus brokerage fees.

2. *Short selling.* Here you will sell high and buy low. In a short sale, you'll earn a profit if market price of the security declines. To make a short sale the broker borrows the security from someone else and then sells it for you to another. Later on, you buy the shares back. If you buy the shares back at a lower price than the broker sold them for, you will make a profit. You "sell short against the box" when you sell short shares you actually own (not borrowed shares). You lose money when the repurchase price is higher than the original selling price.

Example 1

Suppose that you sell short 50 shares of stock having a market price of \$25 per share. The broker borrows the shares from you and sells them to someone else for \$1,250. The brokerage house holds on to the proceeds of the short sale. Later on, you buy the stock back at \$20 a share, earning a per share profit of \$5, or a total of \$250.

3. *Buying on margin.* A margin purchase is made partly on credit. Margin requirements are generally about 50% cash and 50% credit. Typically, you have to pay more cash for stock than for bonds because of the increased risk. You must pay interest to the brokerage house on the money you owe them. When you buy on margin, you can make a high return or incur a significant loss, so be careful.

Example 2

You purchase 100 shares of Texas Instrument stock at \$50 per share, or \$5,000. The margin requirement is 70%, so you pay \$3,500. The \$1,500 balance represents a loan from the brokerage house. If the interest rate is 10%, you'll pay an annual interest charge of \$150 ($10\% \times \$1,500$). The brokerage fee is \$60. A margin purchase magnifies return since only a part payment was made for security. If the stock goes to \$55 next year, you will receive from sale \$5,500 ($\55×100 shares). Your net return before interest and commission is \$2,000 ($\$5,500 - \$3,500$). After interest and commission you earn \$1,790 ($\$2,000 - \210). Your net rate of return is 51.1% ($\$1,790/\$3,500$).

4. *Odd lots and round lots.* An odd-lot transaction is one having fewer than 100 shares of a security. A round-lot transaction is in multiples of 100. If you purchase 50 shares of Company XYZ, for example, you make an odd-lot purchase. If you buy 235 shares of Company DEF, you make a combination round-lot and odd-lot transaction.
5. *Block trade.* A block trade is an order for minimum of 10,000 shares.

What are the various kinds of orders to your broker?

Brokerage commissions are tied to the number of shares ordered and the total market value of the shares bought and sold. The types of orders you may place for stock transactions are as follows:

1. *Market order.* You transact a market order when you purchase or sell stock at the existing market price.
2. *Limit order.* This means purchasing at no more than a specified price or selling at no less than a specified price. The order remains open for a stated time period or until withdrawn. A higher commission is usually charged for this privilege.

Example 3

You give a limit order to purchase at \$10 or less a security now selling at \$11. If the stock goes up to \$20, your broker will not buy it; if it falls to \$10, the broker buys. *Note:* Such an order may be suitable when market prices vary or uncertainty exists.

3. *Day order.* Your order is just for the present day.
4. *Good till canceled (GTC).* An order open until consummated or withdrawn.
5. *Stop-loss order.* This is an order to purchase or sell a security when it rises to or drops below a specified price.

Example 4

Suppose that you own 1,000 shares of Avis, having a market price of \$50 per share. You give your broker a stop-loss order to sell this if it decreases to \$46. Because you originally bought it at \$26 a share, your stop-loss order locks in a gain of \$20 ($\$46 - \26).

By selling the shares at a present price, you are insulated from later stock price declines. This order cannot be used for over-the-counter securities. *Note:* It is advisable to set the order at about 18% percent below your initial cost or the highest price over the last 52 weeks.

6. *Time order.* This order tells your broker to sell at a specified price during a prescribed time period or until withdrawn.

Example 5

You want to sell 50 shares of ABC at \$30 per share, and you expect the price of the stock to increase to \$30 in one month. You execute a time order with your broker to sell your shares at \$30 within a month period.

7. *Scale order.* You execute an order to buy or sell a security in given amounts at various prices.

When is the settlement date?

A settlement for a stock transaction occurs on the third full business day subsequent to the trade. It is nicknamed “T plus three” for “trade plus three days.” For example, if you purchase shares you must pay for them by the third business day (settlement date) subsequent to the date of purchase (trade date).

Example 6

You buy stock on March 7 (Monday). Then the settlement date is March 10 (Thursday).

The same rule applies to bonds, municipal securities, mutual funds (closed-end), and limited partnerships that trade on an exchange. Options and government securities such as Treasury bills must be settled within *one* business day after the trade.

How do you pick a stockbroker?

Brokerage fees are incurred when you purchase or sell a security. The brokerage fee is typically from 2 percent to 5 percent of the amount of the transaction. Upon the sale of a security you pay nominal federal fees.

You can save a lot of money through a discount broker if you make your own stock choices or you do not require brokerage reports and services. You can also negotiate commissions with your broker. Some discount brokers will do research for clients for a fee. *Note:* In the past, brokerage recommendations have not been better than random investing. Further, there is much “sales talk.” Before picking a full service or discount broker, do some homework including the following:

1. Look at several brokerages and their fees. Compare rates and range of services offered. Many brokerages—discount as well as full service—charge minimum commission rates, which means you will pay at least that amount for any trade. *Note:* Check out the competition. You may get the information about rates from Mercer Inc., 80 Fifth Avenue, New York, NY 10011.
2. Determine how your brokerage house sets its rates. Some use the dollar amount of the transaction, some base it on the number of shares. The rate also can depend on the type of security traded. For example, it will cost more to execute an option trade. Some offer rebates or discounts based on the volume of trades.
3. How often and what types of information do you get? Some only mail the statement quarterly, others do it monthly. Some include balances, stock positions, dividends, and interest earned.

Are you better off with stock splits and stock dividends?

A company may issue more shares by a stock split and/or stock dividend. A stock split reduces the cost per share proportionately. For example, a two-for-one split means for each one share you had before, you now have two shares, however, the cost per share is halved so the total cost is identical. A stock split takes place when a business feels its stock price is excessive and wishes to reduce the per share cost to stimulate buying by smaller investors.

A stock dividend is a transfer of equity from retained earnings to paid-in capital. Additional shares are outstanding following the stock dividend, but every shareholder maintains the same percentage of ownership. In effect, a stock dividend divides the pie (the corporation) into more pieces, but the pie is still the same size. Hence, a corporation will have a lower EPS and a lower book value per share following a stock dividend, but every shareholder will be just as well off as previously.

A stock dividend is a pro rata distribution of more shares of a firm's stock to investors. For example, a 20 percent stock dividend means that for each 1 share owned you receive .20 share. If you owned 500 shares, you will have 600 shares after the stock dividend.

What you must know about cash dividends

Most companies declare more than half of their net income in dividends. Review a company's dividend trend over the years to anticipate what future dividends might be. Is the firm's dividend policy in conformity with your wants? Refer to Standard and Poor's *Stock Guide* for dividend records and ratings by company.

You pay tax on cash dividends. Such dividends are usually issued quarterly. Important dates for dividends are:

1. *Declaration date.* The date the board of directors declares a dividend. At such time, the company obligates itself.
2. *Date of record.* The date you must own the stock to receive the dividend. If you sell your stock before the record date, you forfeit the dividend.
3. *Payment date.* The date the dividend will be mailed to you - typically several weeks subsequent to the date of record.

Example 7

A company declares a dividend on March 10 (date of declaration) payable April 25 (date of payment) to all shareholders of record April 1 (date of record).

4. *Ex-Dividend date.* This is 2 business days before the record date. It determines who is eligible to receive the declared dividend. The ex-dividend date is the one on and after which the privilege to receive the current dividend is not automatically transferred from the seller to the buyer. The stock starts to be traded ex-dividend. The dividend is payable to the shareholder of record prior to the ex-dividend date.

Are dividend reinvestment and cash option plans for you?

A benefit of a dividend reinvestment plan is that the firm reinvests your dividends to purchase additional shares with no or little brokerage fee. You get more shares at a discount (e.g., example, 10 percent) off market price. Identify companies having a dividend reinvestment plan by examining *Moody's Annual Dividend Record*.

A disadvantage to dividend reinvestment is the delay in selling reinvested shares, because the company usually retains the reinvested shares. Additionally, a company prohibits you from selling some of the reinvested shares. If you sell, you may be required to sell your entire holdings to terminate the dividend reinvestment account. A delay may exist in purchasing stock via the purchase plan. Additionally, reinvested dividends are treated as ordinary income when paid for tax purposes, regardless of whether the distributions are not received or not in cash. Some plans permit investing more cash (than the dividend payment).

A cash option plan also allows the investment of more money without charges being assessed.

An automatic reinvestment plan is like “dollar cost” averaging: It gives you the opportunity to buy shares in good and bad markets, thus “averaging out” your cost per share.

Is buying stock on margin (margin trading) a good idea?

The term “margin trading” is the buying of a security by paying the margin requirement and borrowing the remaining amount from the seller. The purchaser pays the margin requirement that is set by the Federal Reserve and borrows the remaining money from the seller. The seller holds the security as collateral. If you buy shares on margin (credit), interest is assessed on the unpaid balance in your brokerage account. The interest usually is 3 percent above the prevailing interest rates at banks. You can borrow up to 50 percent of the total value of stocks, up to 70 percent for corporate bonds, and up to 90 percent for U.S. Government securities. More must be deposited for stock than for

bonds because there is more risk. If your portfolio's value declines significantly, you will get a "margin call" to send in more cash or securities, or sell some stock. There must be at least \$2,000 in cash (or equity in securities) on deposit to open a margin account.

Using margin (credit) provides the chance to increase return through leverage. You make a partial payment for a security that increases in market price. But your loss may deepen, if the market price of the stock portfolio drops.

Example 8

You purchase 100 shares of TGY Company at \$50 per share, or \$5,000. You pay 70 percent down, or \$3,500 with \$1,500 on credit. The interest rate is 10 percent. The per annum interest charge is then \$150 ($\$1,500 \times .10$). Assuming per share price appreciates to \$60 and brokerage charges are \$100, your return rate equals:

$$\text{Net return} = \$1,000 - \$150 - \$100 = \$750$$

$$\text{Rate of return} = \$750/\$3,500 = 21.4\%$$

Example 9

You purchased 200 shares of Ace Company at \$30 per share on margin last year. The brokerage commission was \$100. You paid 70 percent down with the balance on credit subject to 10 percent in interest charge. You now sell the security for \$40 per share minus a brokerage commission of \$150. The gain or loss and the return without and with margin appears below:

	WITHOUT MARGIN	WITH MARGIN
Purchase price + commission	\$6,100 (a)	\$6,100 (a)
Margin on interest	0	183 (b)
Initial cash investment	\$6,100	4,270 (c)
Sales price + commission	\$7,850 (d)	\$7,850 (d)
Gain	\$1,750 (e)	\$1,567 (f)
Return on investment	28.7% (g)	36.7% (h)

(a) $\$6,000 + 100$ (commission) = \$6,100

(b) $\$6,100 \times 30\% \times 10\%$ = \$183

(c) $\$6,100 \times 70\%$ = \$4,270

(d) $\$8,000 - \150 (commission) = \$7,850

(e) $\$7,850 - \$6,100$ = \$1,750

(f) $\$7,850 - \$6,100 - \$183$ (interest) = \$1,567

(g) $\text{Gain}/\text{Initial cash investment} = \$1,750/\$6,100 = 28.7\%$

(h) $\text{Gain}/\text{Initial cash investment} = \$1,567/\$4,270 = 36.7\%$

Is selling a stock short advisable?

In short selling, you gain if the stock price declines. Short selling is accomplished by borrowing securities from a broker and selling those securities. At a later time, the loan is repaid by buying securities on the open market and returning them to the broker. The seller speculates that the stock's market price will decline. "Selling short against the box" is when you sell short shares you own rather than borrow. You can only make a short sale on an "up-tick," when stock price is increasing. The reason for the up-tick requirement is to prevent further selling which would exacerbate the effect of sharply declining stock prices.

You need a margin account with cash or securities valued at least 50 percent of the market value of the securities you wish to sell short. You must keep the proceeds from the short sale in your brokerage account. Brokerage commissions are incurred on both the sale and repurchase.

Some reasons for short selling include:

1. You expect a declining stock price.
2. You want to delay a gain to postpone taxes on it from one year to another.

You may want to give a limit order instead of a market order when selling short. A problem in shorting a stock "at the market" is the "up tick" rule (i.e., when the current price exceeds the prior one). However, you can always sell short over-the-counter stocks. If market price declines drastically, it may take a while for there to be an "up tick."

Example 10

If GEF Company was initially at \$50 per share when you put your order in, and sharply declined when you sold short, the price may be \$42. You could have insulated yourself from this by placing a limit order to sell, for example, for \$47 or more.

Return and Risk

Investment success depends on a comprehension of risk and return. How to choose among alternative investment instruments requires that you estimate and evaluate risk-return tradeoffs for the alternative investment available. Therefore, you must understand how to measure the return and the risk associated with an investment. We will discuss how to measure both historical and expected rates of return and risk.

What is return?

Return is the investment reward. You must compare expected return for an investment with the risk. *Total return on an investment* equals:

- (1) Periodic cash payments (current income)
- (2) Appreciation (or depreciation) in value (capital gains or losses).

Current income may be bond interest, cash dividends, rent, etc. *Capital gains or losses* are changes in market value. A capital gain is the excess of selling price over original cost. A capital loss is the opposite.

Return is measured considering the relevant time period (holding period).

$$\text{Holding Period Return (HPR)} = \frac{\text{Current Income} + \text{Capital Gain (or loss)}}{\text{Purchase Price}}$$

Example 1

Assume the investments in stocks X and Y for a one period ownership:

	STOCK	
	X	Y
Purchase Price		
(Beginning of year)	\$200	\$200
Cash Dividend		
Received		
(During the year)	\$15	\$20
Sales Price		
(End of year)	\$217	\$186

The current income from the investment in stocks X and Y for a one-year period are \$15 and \$20, respectively. For stock X, a capital gain of \$17 (\$217 sales price - \$200 purchase price) is realized for the period. In the case of stock Y, a \$14 capital loss (\$186 sales price - \$200 purchase price) arises. The total return on each investment is computed below:

	STOCK	
<i>Return</i>	X	Y
Cash dividend	\$15	\$20
Capital gain (loss)	17	(14)
Total return	\$32	\$6

Then,

$$\text{HPR (Stock X)} = \frac{\$15 + \$17}{\$200} = \frac{\$32}{\$200} = 16\%$$

$$\text{HPR (Stock Y)} = \frac{\$20 - \$14}{\$200} = \frac{\$6}{\$200} = 3\%$$

How do you measure the return over time?

It is one thing to calculate the return for a single holding period but another to explain a series of returns over time. If you keep an investment for more than one period, you need to understand how to derive the average of the successive rates of return. Two

approaches to multiperiod average (mean) returns are: arithmetic average return and the compound (geometric) average return. The arithmetic average return is the simple mean of successive one-period rates of return, defined as:

$$\text{Arithmetic average return} = 1/n \sum r_t$$

where n=the number of time periods and r =the single holding period return in time t. *Caution:* The arithmetic average return can be misleading in multiperiod return computations.

A better accurate measure of the actual return obtained from an investment over multiple periods is the *compound (or geometric) average return*. The compound return over n periods is derived as follows:

$$\begin{aligned} \text{Compound average return} &= \sqrt[n]{(1+r_1)(1+r_2)\dots(1+r_n)} - 1 \\ &= [(1+r_1)(1+r_2)\dots(1+r_n)]^{1/n} - 1 \end{aligned}$$

Example 2

Assume the price of a stock doubles in one period and depreciates back to the original price. Dividend income (current income) is non-existent.

	TIME PERIODS		
	t=0	t=1	t=2
Price (end of period)	\$40	\$80	\$40
HPR	—	100%	-50%

The arithmetic average return is the average of 100% and -50%, or 25%, as indicated below:

$$\frac{100\% + (-50\%)}{2} = 25\%$$

However, the stock bought for \$40 and sold for the same price two periods later did not earn 25%; it earned zero. This can be illustrated by determining the compound average return.

Note that n=2, r₁ = 100%, and r₂ = -50% = -0.5

Then,

$$\begin{aligned} \text{Compound average return} &= \sqrt{(1+1)(1-0.5)} - 1 \\ &= \sqrt{(2)(0.5)} - 1 \\ &= \sqrt{1} - 1 = 1 - 1 = 0 \end{aligned}$$

Example 3

Applying the formula to the data below indicates a compound average of 11.63 percent, somewhat less than the arithmetic average of 26.1 percent.

(

1) TIME	(2) PRICE	(3) DIVIDEND	(4) TOTAL RETURN	(5) HOLDING PERIOD RETURN (HPR)
0	\$100	\$ __	\$ __	__
1	60	10	-30(a)	-0.300(b)
2	120	10	70	1.167
3	100	10	-10	-0.083

$$(a) \$10 + (\$60 - \$100) = \$-30$$

$$(b) \text{HPR} = \frac{\$-30}{\$100} = -0.300$$

The arithmetic average return is $(-0.300+1.167-0.083)/3 = .261 = 26.1\%$, but the compound return is $[(1-0.300)(1+1.167)+(1+0.083)]^{1/3} - 1 = 0.1163$, or 11.63%.

What is the effective annual yield?

Different kinds of investments use different compounding periods. For instance, most bonds pay interest semiannually; some banks offer interest quarterly. If you want to compare investments with different compounding periods, you must put them on a relative basis. The effective annual yield, commonly referred to as *annual percentage rate (APR)*, is used for this purpose:

$$APR = (1 + r/m)^m - 1.0$$

where r = the stated, nominal or quoted rate

m = the number of compounding periods per year.

Example 4

If a bank offers 6 percent interest, compounded quarterly, the annual percentage rate is:

$$APR = (1 + .06/4)^4 - 1.0 = (1.015)^4 - 1.0 = 1.0614 - 1.0 = 0.0614 = 6.14\%$$

Thus, if one bank offered 6 percent with quarterly compounding, but another offered 6.14 percent with annual compounding, they would both be offering the same yield.

How do you compute the expected rate of return?

You are interested in forecasting future returns from an investment in a security. You should specify the most probable outcome (called the *expected rate of return*). Historical (actual) return rates could furnish a useful basis to formulate future expectations. Probabilities (subjective or objective) may be used to evaluate the expected return. The expected rate of return is the weighted average of possible returns from a particular investment, weights being probabilities.

$$\bar{r} = \sum r_i p_i$$

where r_i is the i th possible return, p is the probability of the i th return, and n is the number of possible returns.

Example 5

Assume likely rate of return (including dividends and price changes), depending upon the economic climate (i.e., prosperity, normal, and stagflation). What might you earn next year on a \$100,000 investment?

STATE OF ECONOMY	RETURN (r_i)	PROBABILITY (p_i)
Prosperity	20%	.5
Normal	10	.3
Stagflation	-5	.2

The expected rate is:

$$r = (20\%)(0.5) + (10\%)(.3) + (-5\%)(.2) = 12\%$$

On average, your annual return is 12%, ranging from a 5 percent loss to 20 percent gain.

How do you measure risk?

Total risk may be evaluated by the *standard deviation*, a statistical measure of dispersion of the probability distribution of possible returns. The greater the deviation, the wider the distribution, and therefore, the more risky the investment.

Mathematically,

$$\sigma = \sqrt{\sum (r_i - \bar{r})^2 p_i}$$

To calculate, we proceed as follows:

Step 1. Initially calculate the expected rate of return (\bar{r}).

Step 2. Deduct each possible return from \bar{r} to arrive at a set of deviations ($r_i - \bar{r}$).

Step 3. Square each deviation, multiply the squared deviation by the probability of occurrence for its respective return, and sum these products to determine the variance:

$$\sigma^2 = \sum (r_i - \bar{r})^2 p_i$$

Step 4. Lastly, use the square root of the variance to obtain the standard deviation.

Example 6

An example of standard deviation computations follows:

		(step 1)	(step 2)	(step 3)	
	Probability				
Return (r_i)	(p_i)	$r_i p_i$	($r_i - \bar{r}$)	($r_i - \bar{r}$) ²	($r_i - \bar{r}$) ² p_i
20%	.5	10%	8%	64	32
10	.3	3	-2	4	1.2
-5	.2	-1	-17	289	57.8
		$\bar{r} = 12\%$			$\sigma^2 = 91$
				(step 4)	$\sigma = \sqrt{91}$
					$\sigma = 9.54\%$

The expected annual return has an average variation of 9.54 percent.

What risks do you face?

Any investment is susceptible to risk (uncertainty). Risk refers to the fluctuation in profit as well as to the possibility of losing some or all of your investment. You face different types of risks when selecting an investment. The irony is that they could produce unexpected returns. Risks include:

1. *Liquidity risk*. The chance that an asset may not be sold on short notice for its market value. If an asset must be sold at a high discount, it is said to have a substantial amount of liquidity risk. If an asset is not liquid, investors will require a higher return than for a liquid asset. The difference is the *liquidity premium*.

2. *Inflation (purchasing power) risk.* The failure of your assets to earn a return to keep up with increasing price levels. Bonds are exposed to this risk because the issuer will be paying back in cheaper dollars in inflationary times.
3. *Interest rate risk.* The variability in the value of an asset to changing interest rates and money conditions. For example, if interest rates increase (decrease), bond (stock) prices decrease (increase).
4. *Business risk.* The risk of fluctuations in operating income when the firm uses no debt. It depends on factors such as demand variability, sales price variability, input price variability, and the amount of operating leverage. Business risk may also be due to operating difficulties such as strike and technological obsolescence.
5. *Market risk.* The change in the price of a stock arising from changes in the overall stock market, irrespective of the fundamental financial condition of the company. For instance, stock prices of companies may be impacted by bull or bear markets.
6. *Default risk.* The risk that the issuing company may be unable to pay interest and/or principal when due. An example is a financially unsound company. U.S. Treasury securities are the marketable securities with the least amount of default risk because they are backed by the full faith and credit of the U.S.
7. *Financial risk.* A type of investment risk associated with excessive debt.
8. *Industry risk.* The uncertainty of the inherent nature of the industry such as high-technology, product liability, and accidents.
9. *International and political risks.* The risks stemming from foreign operations in politically unstable foreign countries. An example is a U.S. company having a location and operations in a hostile country.
10. *Economic risk.* The negative impact of a company from economic slowdowns. For example, airlines have lower business volume in recession.
11. *Currency exchange risk.* The risk arising from the fluctuation in foreign exchange rates.
12. *Social risk.* Problems facing the company due to ethnic boycott, discrimination cases, and environmental concerns.

Risk levels vary among investments. For example, stocks experience less inflation risk than fixed income securities. Money market investments have less liquidity risk than real estate.

What can be done to reduce risk?

Diversification is typically considered panacea to reduction of risk in a portfolio (e.g., stocks, bonds, real estate). The value of each component does not increase or decrease in value at the same amount or time. You are protecting against wide variations. Besides diversifying by investments, you can diversify by maturity. For instance, you may buy bonds having different maturity dates so as to minimize interest risk.

If you wish to obtain optimal risk reduction through the portfolio effect, it should make its next investment in an investment that correlates negatively to the current portfolio holdings. Risk is increased when the investment's returns are positively (directly) correlated with other investments in your portfolio; that is, risk increases when returns on all investments rise or fall together. Consequently, the overall risk is decreased when investments have low variability and are negatively correlated (the diversification effect). One approach is a mutual fund consisting of a portfolio that is well diversified and professionally managed.

What are the considerations in determining how much risk to take?

In looking at an investment, consider the following:

1. What types of risk are associated with it?
2. What risks can or cannot be eliminated or reduced through diversification?
3. What are the returns for those? Is the return sufficient for that risk?

In deciding your risk tolerance, consider:

- ▶ *Family status.* If you are single, you can assume more risk than if you are married with children.
- ▶ *Age.* If you are young, you can assume more risk than if you are old.
- ▶ *Personality.* If you are a nervous person, invest less in stocks or more in cash equivalents such as CDs.
- ▶ *Financial status.* If your net worth and liquidity are healthy, you can assume more investment risk.
- ▶ *Tax rate.* If your tax bracket is high, you can assume more risk when investing in stocks and bonds because the loss for each year (up to \$3,000) is tax deductible.
- ▶ *Business knowledge.* If you are a sophisticated investor, you can take on more risk.
- ▶ *Occupation.* Invest defensively if you have an uncertain job or fluctuating income.

The risk/return tradeoff depends in part upon your utility preferences and comfort level.

How does the risk-return trade-off work?

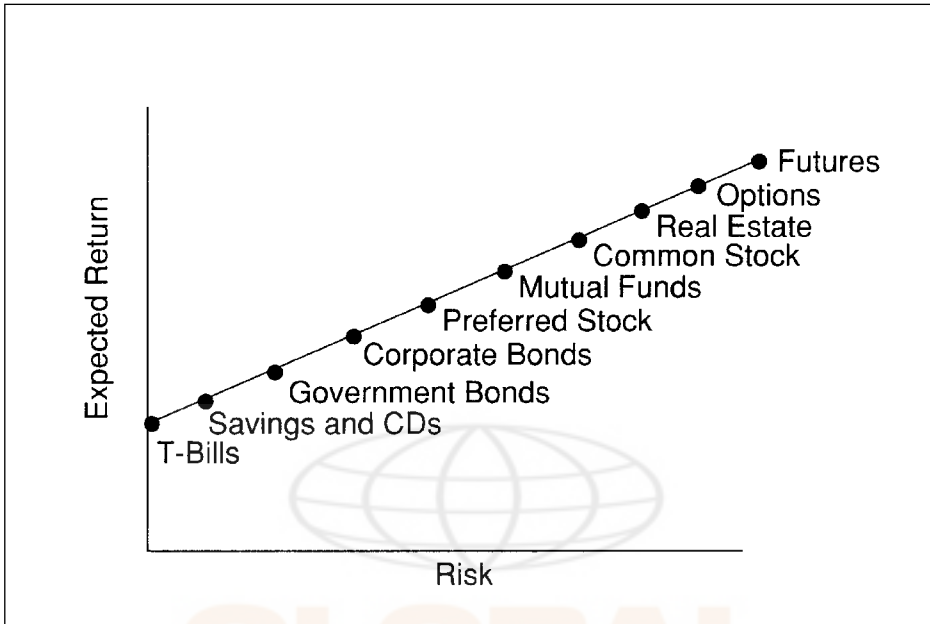
Risk and return are the primary ingredients in investment choices. Expected return must be compared to risk. As risk increases, so must the return to compensate for the greater uncertainty. The risk-return trade-off is crucial. A new business may involve a lot of risk. Therefore, a higher return is required. On the other hand, U.S. T-bills have minimal risk so a low return is appropriate.

Risk (uncertainty) creates potential higher return. You should seek the highest possible return at the risk level you are willing to accept.

During the period 1940-2005, common stocks produced returns averaging 10.3% annually with a 20.6% risk. Small company stocks returned 12.2% with a higher risk 35.0%. Long-term bonds have averaged 5.5% annually with an 8.5% risk. Short-term Treasury bills averaged 3.7% annually with a meager 3.3% risk. These returns illustrate the risk/return trade-off.

The trade-off is on average, not for each case. As an investor, you need to evaluate each investment, comparing expected returns with the risks. The trade-off is also a warning flag. Higher potential returns flag higher risks, even if the risks are not apparent at first.

In general, the risk-return characteristics of each of the major investment instruments can be displayed in a risk-return graph, as shown in Figure 3.1. Although the locations on the diagram are only approximate, it should be apparent that you can pick from a wide variety of vehicles, each having certain risk-return combinations. *Note:* U.S. Treasury securities (T-Bills) are backed by the full faith and credit of the federal government and are therefore the least risky form of investment. On the other extreme, Futures are highly speculative in nature because they are usually purchases in the hope of making a short-term profits based on changes in supply and demand.

Figure 3.1: Risk-return tradeoffs for various investment vehicles

What is the meaning of beta?

Total risk of a security equals:

$$\text{unsystematic risk} + \text{systematic risk}$$

Unsystematic risk is specific to the company and reduced by *diversification*. Examples are union problems and financial difficulties of the firm. When additional securities are added to the portfolio, we spread the risk and the unsystematic risk of the portfolio decreases.

Systematic risk emanates from uncontrollable forces and is therefore not unique to the stock. Examples are inflation and interest rate changes. Systematic risk relates to the reaction of specific stocks (or portfolios) to changes in the general market. It is also called *nondiversifiable*, *noncontrollable*, or *market risk*.

In sum, the *total* risk of each stock is irrelevant. It is the systematic component of that total instability that is relevant for valuation. It is the only element of total risk that investors will get paid to assume, which is measured by *beta*. Beta aids in estimating how much the security will rise or fall if you know which direction the market will go. It assists in determining risk and expected return.

There is a relationship between a security's expected (or required return) and its beta (see Figure 3.2), known as the *Capital Asset Pricing Model (CAPM)*. The formula to determine a security's expected return follows.

$$r_j = r_f + b(r_m - r_f)$$

where r_j = a security's expected (required) return, r_f = risk-free rate, and r_m = market return.

Or, stated otherwise:

$$\begin{aligned} \text{Expected return} &= \text{risk-free rate} + \text{beta} (\text{market return} - \text{risk-free rate}) = \\ &\text{risk-free rate} + \text{beta} \times \text{market risk premium} \end{aligned}$$

where the risk-free rate equals the rate on a security like a T-bill and the risk-free rate *less* expected market return (e.g., Standard & Poor's 500 Stock Composite Index) is called the *market risk premium*.

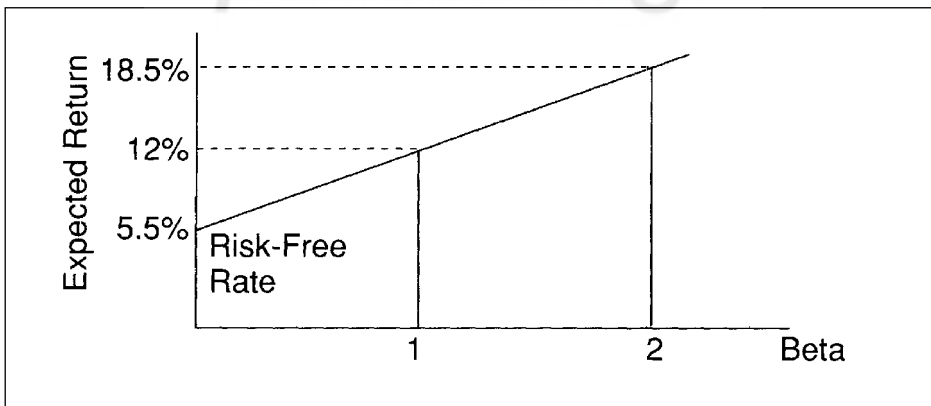
The market risk premium is the extra return exceeding that offered on T-bill, to justify for taking on certain risk expressed by *beta*. The relevant expression of risk is the risk of the individual security, or its beta. The higher a stock's beta, the greater the return expected (or required) by the investor.

Example 7

Assume a risk-free rate = 5.5%, market return = 12%. If a beta is 2.0, the risk premium equals: $2.0 \times (12\% - 5.5\%) = 2.0 \times 6.5\% = 13\%$

The investor would want an extra 13% (risk premium) on the security besides the risk-free return of 5.5%. Hence, the required return is $5.5\% + 13\% = 18.5\%$ (see Figure 3.2).

Figure 3.2: Risk and Return



How do you read beta?

Beta is a security's volatility compared to an average security. It measures a security's return over time to the overall market. For example, if a company's beta is 1.5, it means that if the stock market rises 10%, the company's common stock increases 15%; if the market falls 10%, the company goes down 15%. A guideline on reading beta follows:

BETA	MEANING
0	The security's return is independent of the market. An example is a risk-free security (e.g., T-Bill).
0.5	The security is half as volatile as the market.
1.0	The security is as volatile or risky as the market (i.e., average risk). This is the beta value of the market portfolio (e.g., Standard & Poor's 500).
2.0	The security is twice as volatile or risky, as the market.

Betas for some selected corporations

COMPANY	OCTOBER 24 2010
Boeing (BA)	1.28
Google (GOOG)	1.22
Toyota (TM)	0.71
Nordstrom (JWN)	1.80
Intel (INTC)	1.15
Wal Mart (WMT)	0.32

Source: *MSN Money Central Investor* (<http://moneycentral.msn.com/investor/home.asp>)

Example 8

XYZ stock returned 10%. The risk-free rate on T-bill is 6%, market return is 12%, and the company's beta is 1.3. What is the expected (required) return?

$$\begin{aligned}
 \text{Expected (required) return} &= 6\% + 1.3 (12\% - 6\%) \\
 &= 6\% + 7.8\% \\
 &= 13.8\%
 \end{aligned}$$

Because the actual return (10%) is below the required return (13.8%), you would not want to buy the stock.

Example 9

The higher a stock's beta, the greater the return expected (or demanded) by the investor as follows:

STOCK	BETA	REQUIRED RETURN
Mobil	.85	$6\% + .85(12\% - 6\%) = 11.1\%$
Bristol-Meyers	1.0	$6\% + 1.0(12\% - 6\%) = 12\%$
Neiman-Marcus	1.65	$6\% + 1.65(12\% - 6\%) = 15.9\%$

How do investment alternatives affect the risk-return trade-off?

Investment alternatives differ as to both return and risk. Table 3.1 summarizes major types of investments and their return/risk characteristics. The rankings are the authors' opinions. The ranking is for a typical investment within the category. However, there are many variations within each class.

Table 3.1: Investment alternatives and return/risk considerations

INVESTMENT TYPE	TOTAL RETURN	LIQUIDITY RISK	INFLATION RISK	INTEREST RATE RISK	BUSINESS RISK	MARKET RISK
Savings accounts, money market accounts, CDs	Low	None	High	High	Very Low or None	None
Savings bonds, Treasury securities	Low	Low	High	High	Very Low	None
High-grade corporate and municipal bonds	Average	Low	Average	Average	Low	Average
Balanced mutual funds, high-grade preferred stock	High	Very Low	Low	Average	Very Low	Average

INVESTMENT TYPE	TOTAL RETURN	LIQUIDITY RISK	INFLATION RISK	INTEREST RATE RISK	BUSINESS RISK	MARKET RISK
High-grade common stocks, growth funds	High	Very Low	Low	Average	Very Low	Average
Real estate	High-Very High	High	Average	High	Low-Average	Low
Speculative stocks and bonds	High	Average	High	High	High	High
Options and futures	Very High	Very High	Low-Average	Low-High	Very High	Very High
Collectibles	High-Very High	Average	Average	Average	Average-High	Average

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Fundamental Analysis

Fundamental analysis concentrates on the future outlook of growth and earnings. The analysis studies such elements as earnings, sales, management and assets. It looks at three things: the overall economy, the industry, and the company itself. Through the study of these elements, you are trying to determine whether the stock is undervalued or overvalued compared to the current market price.

In other words, for a valuation of a stock, you should be aware of economic conditions, political environment, market status, industry surroundings, and company performance. Ideally the intelligent investor should ask and obtain answers to at least four basic questions:

1. What is the state of the economy? In view of such conditions is it a good time to invest? Where are we in the business cycle? Is the boom likely to top out shortly? Is a recession near at hand? Questions in this area will vary with the stage of the business cycle.
2. What is the state of the market? Are we in the early stages of a bull market? Has the low point of a bear market been reached? Is the bull market about to top out? Questions to be asked will vary with the state of the market.
3. What is the state of the industry? If answers to the preceding two questions seem favorable, then there must be an investment selection. What industries are likely to grow most rapidly? Are there any special factors which favor a particular industry?
4. What company is desirable? Which company or companies within the industry are likely to be best? Which companies are to be avoided because of poor prospects?

Figure 4.1 summarizes various factors that will go into your investment decision making process, ranging from economics and the external environment surrounding the investment vehicle to the company's performance measures.

What is fundamental analysis?

Fundamental analysis evaluates a firm's stock based on an examination of the corporation's financial statements. It considers overall financial health, economic and political conditions, industry factors, and future outlook of the company. The analysis attempts to ascertain whether stock is overpriced, underpriced, or priced in proportion to its market value. A major premise of fundamental analysis is that all stocks have an intrinsic value, but some stocks may be incorrectly priced in the market at any given time. A stock is valuable to you only if you can predict the future financial performance of the business. Financial statement analysis gives you much of the data you will need to forecast earnings and dividends.

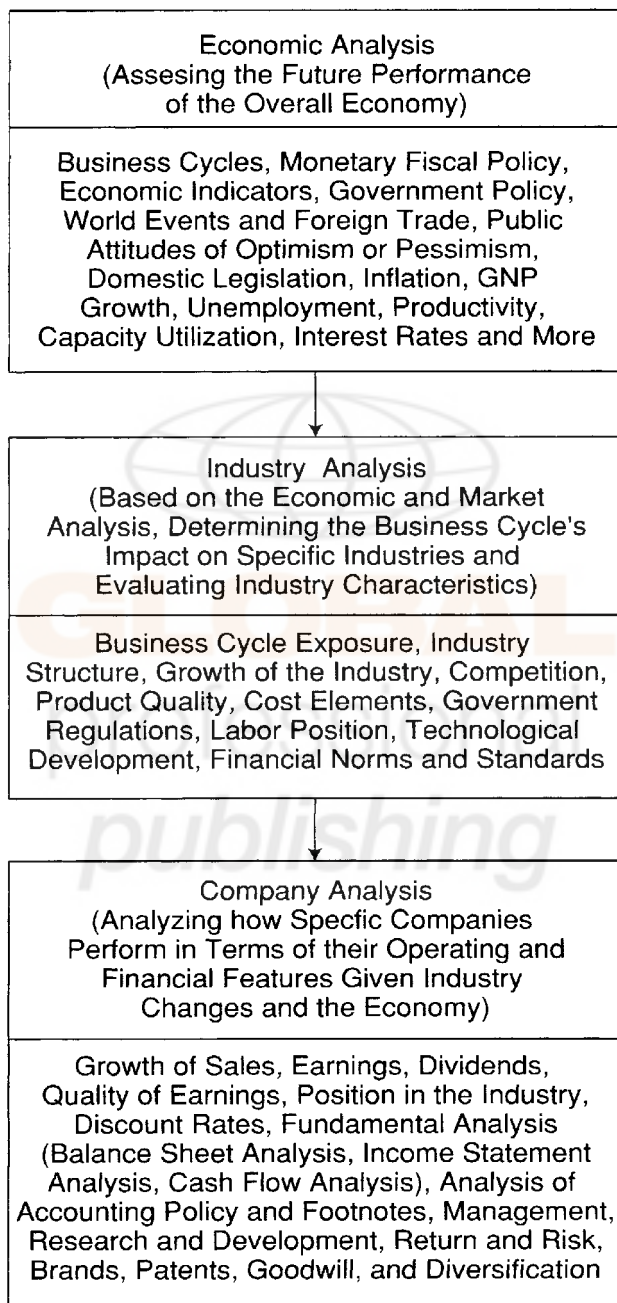
A complete set of financial statements will include the balance sheet, income statement, and statement of cash flows. The first two are vital in financial statement analysis. We will discuss the various financial-statement-analysis tools that you will use in evaluating stocks and bonds. These tools include horizontal, vertical, and ratio analysis, which give a relative measure of the performance and condition of the company.

Why is risk analysis important?

Before you decide to invest in a company, you should consider that firm's economic and political risk. Economic risk relates to the firm's ability to cope with recession and inflation. To determine this, you should find out if the company's business is cyclical, for example, a cyclical business may not be able to pay fixed expenses in a downward economy. Earnings that are affected by cyclical activity can be unstable. Business cycles arise from three conditions: (1) changes in demand; (2) diversification of customer base; and (3) product diversification. The greater the changes in product demand, the more the company is affected by the business cycle, and thus the greater the profit variability. Diversification of customer base protects the firm because revenue is derived from industries that are affected in different ways by the business cycles. Furthermore, a company with noncyclical or countercyclical business lines has greater stability. Finally, a firm with an inadequately diversified product mix will have high correlation of income between products. The higher this correlation, the more the economic cycle will affect the business. Examples are Eastern Airlines and Chrysler: Can you think of other companies that have a high economic risk?

You should make an analysis of the economy primarily to determine your investment strategy. It is not necessary for you to formulate your own economic forecasts. You can rely on published forecasts in an effort to identify the trends in the economy and adjust your investment position accordingly. You must keep abreast of the economic trend and direction and attempt to see how they affect the security

Figure 4.1



market. Unfortunately, there are too many economic indicators and variables to be analyzed. Each has its own significance. In many cases, these variables could give *mixed* signals about the future of the economy and therefore mislead the investor.

Figure 4.2 below summarizes the types of economic variables and their probable effect on the security market and the economy in general. Figure 3 provides a concise and brief list of the significant economic indicators and how they affect bond yields.

Figure 4.2: Economic variables and their impacts on the economy and the security market

ECONOMIC VARIABLES	IMPACT ON SECURITY MARKET
Real growth in GDP (without inflation)	Positive
Industrial production	Consecutive drops are a sign of recession
Inflation	Detrimental to equity and bond prices
Capacity utilization	A high percentage is positive, but full capacity is inflationary
Durable goods orders	Consecutive drops are a sign of recession
Increase in business investment, consumer confidence, personal income, etc.	Positive
Leading indicators	The rise is bullish for the economy and the market; consecutive drops are a sign of bad times ahead
Housing starts	The rise is positive; vice versa
Corporate profits	Strong corporate earnings are positive for the market; vice versa
Unemployment	Unfavorable for the market and economy
Increase in business inventories	Positive for the inflationary economy, negative for the stable economy
Federal deficit	Inflationary and negative; positive for the depressed economy
Deficit in trade and balance of payments	Negative
Weak dollar	Negative
Interest rates	Rising rates depress the value of fixed income securities such as bond prices which tend to fall; vice versa

Figure 4.3: Economic indicators and bond yields

INDICATORS**	EFFECTS ON BOND YIELDS***	REASONS
Business Activity		
GDP and industrial production falls	Fall	As economy slows, Fed may ease credit by allowing rates to fall
Unemployment rises	Fall	High unemployment indicates lack of economic expansion; Fed may loosen credit
Inventories rise	Fall	Inventory levels are good indicators of duration of economic slowdown
Trade deficit rises	Fall	Dollar weakness
Leading indicators rise	Rise	Advance signals about economic health; Fed may tighten credit
Housing starts rise	Rise	Growing economy due to increased new housing demand; fed may tighten; mortgage rates rise
Personal income rises	Rise	Higher income means higher consumer spending, thus inflationary; Fed may tighten
Inflation		
Consumer Price Index rises	Rise	Inflationary
Producer Price Index rises	Rise	Early signal for inflation
Monetary Policy		
Money supply rises	Rise	Excess growth in money supply is inflationary; Fed may tighten
Discount rate rises	Rise	Causes increase in business and loan rates; used to slow economic growth and inflation
Fed buys (sells) bills	Rise (fall)	Adds (deducts) money to (from) the economy; interest rates may go down (up)
Required reserve rises	Rise	Depresses banks' lending

* This table merely serves as a handy guide and should not be construed as accurate at all times

** Fall in any of these indicators will have the opposite effect on bond yields.

*** *Note:* The effects are based on yield and are therefore opposite of how *bond prices* will be affected.

Why are political uncertainties important to consider?

Political risk relates to foreign operations and governmental regulation. Multinational firms with significant foreign operations face uncertainties applying to the repatriation of funds, currency fluctuations, and foreign customs and regulations. Also, operations in politically unstable regions present risk. You should determine the company's earnings and assets in each foreign country.

You should ascertain whether government regulation-foreign or domestic-is excessively strict. For example, a regulatory agency may try to restrain a utility from passing rate increases on to consumers, or it may refuse to approve construction of a nuclear power plant. Tight environmental and safety regulations may exist-such as stringent safety and pollution control requirements. Also consider the effect of current and proposed tax legislation on the business.

Companies that rely on government contracts and subsidies may lack stability because government spending is susceptible to changing political leadership. You should determine the percent of income a company obtains from government contracts and subsidies.

Looking at the industry

In doing a fundamental analysis, you must appraise trends in the industry of which your chosen company is a part. What is the pattern of expansion or decline in the industry? The profit dollar is worth more if earned in a healthy, expanding industry than a declining one. A firm in a rapidly changing technological industry (computers, for example) faces uncertainty due to obsolescence. A business in a staple industry has more stability because demand for its products does not fluctuate.

Capital intensive companies usually have a high degree of operating leverage (fixed cost to total cost). Examples are airlines and autos. High operating leverage magnifies changes in earnings resulting from small changes in sales leading to earnings instability. Also, risk exists because fixed costs such as rent cannot be slashed during a decline in business activity. Earnings will therefore fall off dramatically. Labor-intensive companies are generally more stable because of the variable-cost nature of the business. Variable costs such as labor can be reduced when business takes a turn for the worse.

You should examine the past and expected future stability of the industry by examining competitive forces such as ease of entry and price wars. What industries would you stay away from and why? How about industry life cycles? In the early part of their lives most industries grow at a very rapid rate. After a time the growth rate

slows down, while expansion continues, it is at a more moderate pace (mature growth). Finally, they stop growing and either live a relatively stable existence for a long time - or die.

Industries can be categorized as follows:

1. *Noncyclical industries* - relatively resistant to business cycles (defensive investments), such as food, drug, or utilities.
2. *Cyclical industries* - durable goods such as automobiles, heavy equipment, and housing materials.
3. *Growth industries* - less influenced by business cycles than by investors' expectations that these producers will grow faster than the economy as a whole, such as research-intensive producers such bio-technology.

Analysing financial statements

Now you turn to the company. The analysis of financial statements reveals important information to present and prospective investors. Financial statement analysis attempts to answer the following basic questions:

1. How well is the business doing?
2. What are its strengths?
3. What are its weaknesses?
4. How does it fare in the industry?
5. Is the business improving or deteriorating?

What and why of financial statement analysis?

An investor is interested in the present and future level of return (earnings) and risk (liquidity, debt, and activity). You, as an investor, evaluate a firm's stock based on an examination of its financial statements. This evaluation considers overall financial health, economic and political conditions, industry factors, and future outlook of the company. The analysis attempts to ascertain whether the stock is overpriced, underpriced, or priced in proportion to its market value. A stock is valuable to you only if you can predict the future financial performance of the business. Financial statement analysis gives you much of the data you will need to forecast earnings and dividends.

What are horizontal and vertical analyses?

Comparison of two or more years' financial data is known as *horizontal analysis*. Horizontal analysis concentrates on the trend in the accounts in dollar *and* percentage terms over the years. It is typically presented in comparative financial statements (see

Delta, Inc. financial data in Figures 4.4 and 4.5). In annual reports, comparative financial data are usually shown for five years.

Through horizontal analysis you can pinpoint areas of wide divergence requiring investigation. For example, in the income statement shown in Figure 4.5, the significant rise in sales returns taken with the reduction in sales for 20X1-20X2 should cause concern. You might compare these results with those of competitors.

It is essential to present both the dollar amount of change and the percentage of change since the use of one without the other may result in erroneous conclusions. The interest expense from 20X0-20X1 went up by 100.0%, but this represented only \$1,000 and may not need further investigation. In a similar vein, a large number change might cause a small percentage change and not be of any great importance.

Key changes and trends can also be highlighted by the use of *common-size statements*. A common size statement is one that shows the separate items appearing on it in percentage term. Preparation of common-size statements is known as *vertical analysis*. In vertical analysis, a material financial statement item is used as a base value, and all other accounts on the financial statement are compared to it. In the balance sheet (in Figure 4.4, for example, for Year 20X2), for example, total assets equal 100%. Each asset is stated as a percentage of total assets. Similarly, total liabilities and stockholders' equity is assigned 100% with a given liability or equity account stated as a percentage of the total liabilities and stockholders' equity.

Placing all assets in common-size form clearly shows the relative importance of the current assets as compared to the noncurrent assets. It also shows that significant changes have taken place in the composition of the current assets over the last year. Notice, for example, that receivables have increased in relative importance and that cash has declined in relative importance. The deterioration in the cash position may be a result of inability to collect from customers.

For the income statement, 100% is assigned to net sales with all other revenue and expense accounts related to it. It is possible to see at a glance how each dollar of sales is distributed between the various costs, expenses, and profits. For example, notice from Figure 4.6 that 64.8 cents of every dollar of sales were needed to cover cost of goods sold in 20X2, as compared to only 57.3 cents in the prior year; also notice that only 9.9 cents out of every dollar of sales remained for profits in 20X2--down from 13.6 cents in the prior year. Note also that you should also compare the vertical percentages of the business to those of the competition and to the industry norms. Then you can determine how the company fares in the industry.

Figure 4.6 shows a common size income statement based on the data provided in Figure 4.5.

Figure 4.4:
DELTA, Inc.
Comparative Balance Sheet (In Thousands of Dollars)
December 31, 20X2, 20X1, 20X0

20X2	20X1	20X0	Incr. or 20X1- 20X1	Decr. 20X1- 20X0	% Incr. 20X2- 20X1	or Decr. 20X1- 20X0		
ASSETS								
Current Assets:								
Cash	\$28	12%	\$36	\$36	(8.00)	0.00	-22.2%	0.0%
Marketable Securities	22	10%	15	7	7.00	8.00	46.7%	114.3%
Accounts Receivable	21	9%	16	10	5.00	6.00	31.3%	60.0%
Inventory	53	23%	46	49	7.00	(3.00)	15.2%	-6.1%
Total Current Assets	124	55%	113	102	11.00	11.00	9.7%	10.8%
Plant And Equip.	103	45%	91	83	12.00	8.00	13.2%	9.6%
Total Assets	227	100%	204	185	23.00	19.00	11.3%	10.3%
LIABILITIES								
Current Liabilities	56	25%	50	51	6.00	(1.00)	12.0%	-2.0%
Long-term debt	83	37%	74	69	9.00	5.00	12.2%	7.2%
Total Liabilities	139	61%	124	120	15.00	4.00	12.1%	3.3%
STOCKHOLDERS' EQUITY								
Common Stock, \$10 par, 4,600 shares	46	20%	46	46	0.00	0.00	0.0%	0.0%
Retained Earnings	42	19%	34	19	8.00	15.00	23.5%	78.9%
Total Stockholders' Equity	88	39%	80	65	8.00	15.00	10.0%	23.1%
Total Liab.and Stockholders' Equity	\$227	100%	\$204	\$185	\$23.00	\$19.00	11.3%	10.3%

Figure 4.5: DELTA, Inc.
Comparative Income Statement (In Thousands of Dollars)
For the Years Ended December 31, 20X2, 20X1, 20X0

	20X2	20X1	20X0	% Increase/ Decrease		% Increase/ Decrease	
				20X2-20X1	20X1-20X0	20X2-20X1	20X1-20X0
Sales	\$98.3	\$120.0	\$56.6	(\$21.7)	\$63.4	-18.1%	112.0%
Sales Return & Allowances	18.0	10.0	4.0	8.0	6.0	80.0%	150.0%
Net Sales	80.3	110.0	52.6	(29.7)	57.4	-27.0%	109.1%
Cost of Goods Sold	52.0	63.0	28.0	(11.0)	35.0	-17.5%	125.0%
Gross Profit	28.3	47.0	24.6	(18.7)	22.4	-39.8%	91.1%
Operating Expenses							
Selling Expenses	12.0	13.0	11.0	(1.0)	2.0	-7.7%	18.2%
General Expenses	5.0	8.0	3.0	(3.0)	5.0	-37.5%	166.7%
Total Operating Expenses	\$17.0	\$21.0	\$14.0	(\$4.0)	\$7.0	-19.0%	50.0%
Income from Operations	\$11.3	\$26.0	\$10.6	(\$14.7)	\$15.4	-56.5%	145.3%
Nonoperating Income	4.0	1.0	2.0	3.0	(1.0)	300.0%	-50.0%
Income before Interest & Taxes	15.3	27.0	12.6	(11.7)	14.4	-43.3%	114.3%
Interest Expense	2.0	2.0	1.0	0.0	1.0	0.0%	100.0%
Income before Taxes	13.3	25.0	11.6	(11.7)	13.4	-46.8%	115.5%
Income Taxes (40%)	5.3	10.0	4.6	(4.7)	5.4	-46.8%	115.5%
Net Income	\$8.0	\$15.0	\$7.0	(\$7.0)	\$8.0	-46.8%	115.5%

Figure 4.6:
Income Statement and Common Size Analysis:
DELTA, Inc.
(In Thousands of Dollars)
For the Years Ended December 31, 20X2 & 20X1

	20X2 Amount	%	20X1 Amount	%
Sales	\$98.30	122.40%	\$120.00	109.10%
Sales Return & Allowances	18.00	22.40%	10.00	9.10%
Net Sales	80.30	100.00%	110.00	100.00%
Cost of Goods Sold	52.00	64.80%	63.00	57.30%
Gross Profit	28.30	35.20%	47.00	42.70%
Operating Expenses				
Selling Expenses	12.00	14.90%	13.00	11.80%
General Expenses	5.00	6.20%	8.00	7.30%
Total Operating Expenses	\$17.00	21.20%	\$21.00	19.10%
Income from Operations	\$11.30	14.10%	\$26.00	23.60%
Nonoperating Income	4.00	5.00%	1.00	0.90%
Income before Interest & Taxes	15.30	19.10%	27.00	24.50%
Interest Expense	2.00	2.50%	2.00	1.80%
Income before Taxes	13.30	16.60%	25.00	22.70%
Income Taxes (40%)	5.30	6.60%	10.00	9.10%
Net Income	\$8.00	9.90%	\$15.00	13.60%

Working with financial ratios

Horizontal and vertical analysis compares one figure to another within the same category. It is also vital to compare two figures applicable to different categories. This is accomplished by ratio analysis. In this section, you will learn how to calculate the various financial ratios and how to interpret them. The results of the ratio analysis will allow you:

1. To appraise the position of a business,
2. To identify trouble spots that need attention, and
3. To provide the basis for making projections and forecasts about the course of future operations.

Think of ratios as measures of the relative health or sickness of a business. Just as a doctor takes readings of a patient's temperature, blood pressure, heart rate, etc., you will take readings of a business's liquidity, profitability, leverage, efficiency in using assets, and market value. Where the doctor compares the readings to generally accepted guidelines such as a temperature of 98.6 degrees as normal, you make some comparisons to the norms.

To obtain useful conclusions from the ratios, you must make two comparisons:

- *Industry comparison.* This will allow you to answer the question “how does a business fare in the industry?” You must compare the company's ratios to those of competing companies in the industry or with industry standards (averages). You can obtain industry norms from financial services such as Value Line, Dun and Bradstreet, Philadelphia-based Risk Management Association (RMA), and Standard and Poor's. Numerous online services such as AOL and MSN Money Central, to name a few, also provide these data. For example, RMA has been compiling statistical data on financial statements for more than 75 years. The RMA Annual Statement Studies provide statistical data from more than 150,000 actual companies on many key financial ratios, such as gross margin, operating margins and return on equity and assets. If you're looking to put real authority into the “industry average” numbers that your company is beating, the Statement Studies are the way to go. They're organized by SIC codes, and you can buy the financial statement studies for your industry for \$59.95 in report form or over the Internet (www.rmahq.org).
- *Trend analysis.* To see how the business is doing over time, you will compare a given ratio for one company over several years to see the direction of financial health or operational performance.

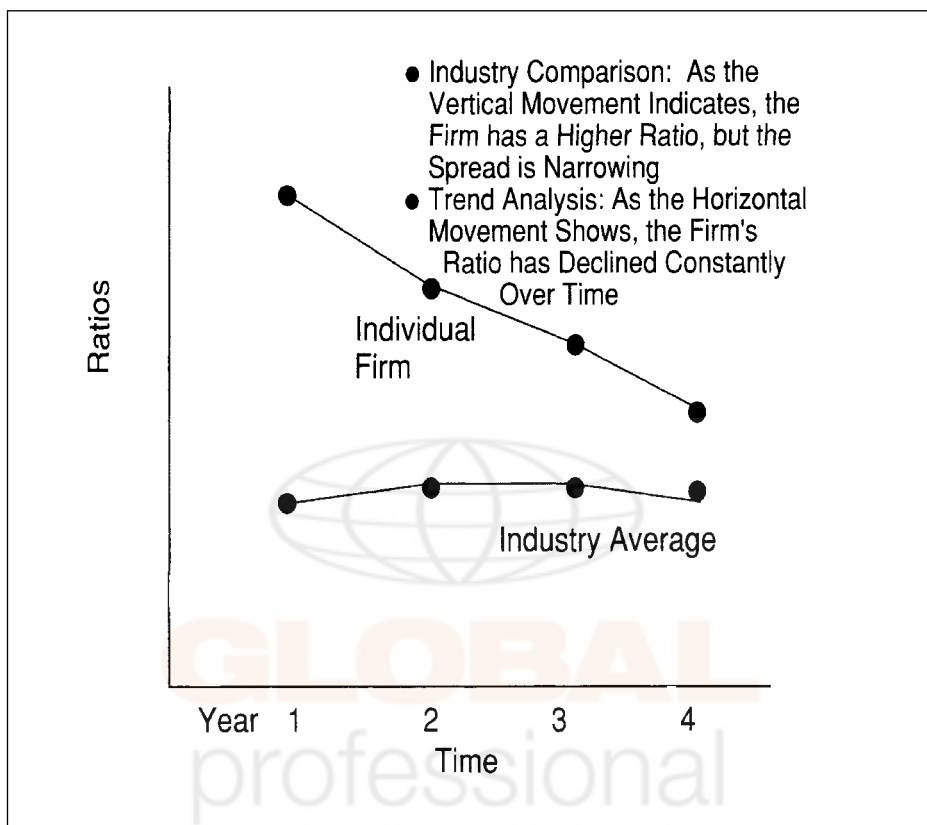
Note: It is always advisable to combine these two comparisons, that is, industry comparison and over time, as shown in Figure 4.7.

Financial ratios can be grouped into the following types: liquidity, asset utilization (activity), solvency (leverage and debt service), profitability, and market value.

How do you evaluate a company's liquidity?

Liquidity is the firm's ability to satisfy maturing short-term debt. Liquidity is crucial to carrying out the business, especially during periods of adversity. It relates to the short term, typically a period of one year or less. Poor liquidity might lead to higher cost of financing and inability to pay bills and dividends. The three basic measures of liquidity are (a) net working capital, (b) the current ratio, and (c) the quick (acid-test) ratio.

Figure 4.7



Throughout our discussion, keep referring to Figures 4.4 and 4.5 to make sure you understand where the numbers come from.

Net working capital equals current assets minus current liabilities. Net working capital for 20X2 is:

$$\begin{aligned}
 \text{Net working capital} &= \text{current assets} - \text{current liabilities} \\
 &= \$124 - \$56 \\
 &= \$68
 \end{aligned}$$

In 20X1, net working capital was \$63. The rise over the year is favorable.

The *current ratio* equals current assets divided by current liabilities. The ratio reflects the company's ability to satisfy current debt from current assets.

$$\text{Current ratio} = \left(\frac{\text{Current assets}}{\text{Current liabilities}} \right)$$

For 20X2, the current ratio is:

$$\left(\frac{\$124}{\$56} \right) = 2.21$$

In 20X1, the current ratio was 2.26. The ratio's decline over the year points to a slight reduction in liquidity.

A more stringent liquidity test can be found in the *quick (acid-test) ratio*. Inventory and prepaid expenses are excluded from the total of current assets, leaving only the more liquid (or quick) assets to be divided by current liabilities.

$$\text{Acid-test ratio} = \frac{\text{cash} + \text{marketable securities}}{\text{current liabilities}}$$

The quick ratio for 20X2 is:

$$\left(\frac{\$28 + \$21 + \$22}{\$56} \right) = 1.27$$

In 20X1, the ratio was 1.34. A small reduction in the ratio over the period points to less liquidity.

The overall liquidity trend shows a slight deterioration as reflected in the lower current and quick ratios, although it is better than the industry norms (see Table 3-4 for industry averages). But a mitigating factor is the increase in net working capital.

How well does the company utilize its assets?

Asset utilization (activity, turnover) ratios reflect the way in which a company uses its assets to obtain revenue and profit. One example is how well receivables are turning into cash. The higher the ratio, the more efficiently the business manages its assets.

Accounts receivable ratios comprise the accounts receivable turnover and the average collection period.

The *accounts receivable turnover* provides the number of times accounts receivable are collected in the year. It is derived by dividing net credit sales by average accounts receivable.

You can calculate average accounts receivable by the average accounts receivable balance during a period.

$$\text{Accounts receivable turnover} = \frac{\text{net credit sales}}{\text{average accounts receivable}}$$

For 20X2, the average accounts receivable is:

$$\frac{\$21 + \$16}{2} = \$18.5$$

The accounts receivable turnover for 20X2 is:

$$\frac{\$80.3}{\$18.5} = 4.34$$

In 20X1, the turnover was 8.46. There is a sharp reduction in the turnover rate pointing to a collection problem.

The *average collection period* is the length of time it takes to collect receivables. It represents the number of days receivables are held.

$$\frac{\text{Average collection period}}{\text{account receivable turnover}} = 365 \text{ days}$$

In 20X2, the collection period is:

$$\frac{365}{4.34} = 84.1 \text{ days}$$

It takes this firm about 84 days to convert receivables to cash. In 20X1, the collection period was 43.1 days. The significant lengthening of the collection period may be a cause for some concern. The long collection period may be a result of the presence of many doubtful accounts, or it may be a result of poor credit management.

Inventory ratios are useful especially when a buildup in inventory exists. Inventory ties up cash. Holding large amounts of inventory can result in lost opportunities for profit as well as increased storage costs. Before you extend credit or lend money, you should examine the firm's *inventory turnover* and *average age of inventory*.

$$\text{Inventory turnover} = \frac{\text{cost of goods sold}}{\text{average inventory}}$$

The inventory turnover for 20X2 is:

$$\frac{\$52}{\$49.5} = 1.05$$

For 20X1, the turnover was 1.33.

$$\text{Average age of inventory} = \frac{365}{\text{inventory turnover}}$$

In 20X2, the average age is:

$$\frac{365}{1.05} = 347.6 \text{ days}$$

In the previous year, the average age was 274.4 days.

The reduction in the turnover and increase in inventory age points to a longer holding of inventory. You should ask why the inventory is not selling as quickly.

The *operating cycle* is the number of days it takes to convert inventory and receivables to cash.

$$\text{Operating cycle} = \text{average collection period} + \text{average age of inventory}$$

In 20X2, the operating cycle is:

$$84.1 \text{ days} + 347.6 \text{ days} = 431.7 \text{ days}$$

In the previous year, the operating cycle was 317.5 days. An unfavorable direction is indicated because additional funds are tied up in noncash assets. Cash is being collected more slowly.

By calculating the *total asset turnover*, you can find out whether the company is efficiently employing its total assets to obtain sales revenue. For example, a total asset turnover of 2 means that every \$1 in assets produces \$2 in sales. A low ratio may indicate too high an investment in assets in comparison to the sales revenue generated.

$$\text{Total asset turnover} = \frac{\text{net sales}}{\text{average total assets}}$$

In 20X2, the ratio is:

$$\frac{\$80.3}{(\$204 + \$227)/2} = \frac{\$80.3}{\$215.5} = 0.37$$

In 20X1, the ratio was .57 (\$110/\$194.5).

There has been a sharp reduction in asset utilization.

DELTA, Inc. has suffered a sharp deterioration in activity ratios, pointing to a need for improved credit and inventory management, although the 20X2 ratios are not far out of line with the industry averages (See Figure 4.4). It appears that problems are inefficient collection and obsolescence of inventory.

Is the business solvent?

Solvency is the company's ability to satisfy long-term debt as it becomes due. Generally, A firm is *insolvent* when its debts exceed its assets (stock-based insolvency) or when its cash flows are inadequate to meet maturing obligations (flow-based insolvency). You should be concerned about the long-term financial and operating structure of any firm in which you might be interested in. Another important consideration is the size of debt in the firm's capital structure, which is referred to as *financial leverage*. (Capital structure is the mix of the *long term* sources of funds used by the firm).

Solvency also depends on earning power; in the long run a company will not satisfy its debts unless it earns profit. A leveraged capital structure subjects the

company to fixed interest charges, which contributes to earnings instability. Excessive debt may also make it difficult for the firm to borrow funds at reasonable rates during tight money markets. *Note:* The early signals of financial distress include late payments, plant closings, negative earnings, employee layoffs, falling stock prices, and dividend reductions.

The *debt ratio* reveals the amount of money a company owes to its creditors. Excessive debt means greater risk to the investor. (Note that equity holders come after creditors in bankruptcy.) The debt ratio is:

$$\text{Debt ratio} = \frac{\text{Total liabilities}}{\text{Total assets}}$$

In 20X2, the ratio is:

$$\frac{\$139}{\$227} = 0.61$$

The *debt-equity ratio* will show you if the firm has a great amount of debt in its capital structure. Large debts mean that the borrower has to pay significant periodic interest and principal.

Also, a heavily indebted firm takes a greater risk of running out of cash in difficult times. The interpretation of this ratio depends on several variables, including the ratios of other firms in the industry, the degree of access to additional debt financing, and stability of operations.

$$\text{Debt-equity ratio} = \frac{\text{Total liabilities}}{\text{Stockholders' equity}}$$

In 20X2, the ratio is:

$$\frac{\$139}{\$88} = 1.58$$

In the previous year, the ratio was 1.55. the trend is relatively static.

Times interest earned (interest coverage ratio) tells you how many times the firm's before-tax earnings would cover interest. It is a safety margin indicator in that it reflects how much of a reduction in earnings a company can tolerate.

$$\text{Times interest earned} = \frac{\text{Income before interest and taxes}}{\text{interest expense}}$$

For 20X2, the ratio is:

$$\frac{\$15.3}{\$2.0} = 7.65$$

In 20X1, interest was covered 13.5 times. The reduction in coverage during the period is a bad sign. It means that less earnings are available to satisfy interest charges.

You must also note liabilities that have not yet been reported in the balance sheet by closely examining footnote disclosure. For example, you should find out about lawsuits, noncapitalized leases, and future guarantees.

As shown in Figure 4.6, the company's overall solvency is poor, relative to the industry averages although it has remained fairly constant. There has been no significant change in its ability to satisfy long-term debt. Note that significantly less profit is available to cover interest payments.

Is this a profitable company?

A company's ability to earn a good profit and return on investment is an indicator of its financial well-being and the efficiency with which it is managed. Poor earnings have detrimental effects on market price of stock and dividends. Total dollar net income has little meaning unless it is compared to the input in getting that profit.

The *gross profit margin* shows the percentage of each dollar remaining once the company has paid for goods acquired. A high margin reflects good earning potential.

$$\text{Gross profit margin} = \frac{\text{gross profit}}{\text{net sales}}$$

In 20X2, the ratio is:

$$\frac{\$28.3}{\$80.3} = 0.35$$

The ratio was .43 in 20X1. The reduction shows that the company now receives less profit on each dollar sales. Perhaps higher relative cost of merchandise sold is at fault.

Profit margin shows the earnings generated from revenue and is a key indicator of operating performance. It gives you an idea of the firm's pricing, cost structure, and production efficiency.

$$\text{Profit margin} = \frac{\text{net income}}{\text{net sales}}$$

The ratio in 20X2 is:

$$\frac{\$8}{\$80.3} = 0.10$$

For the previous year, profit margin was .14. The decline in the ratio shows a downward trend in earning power. (Note that these percentages are available in the common size income statement as given in Figure 4.4).

Return on investment is a prime indicator because it allows you to evaluate the profit you will earn if you invest in the business. Two key ratios are the *return on total assets* and the *return on equity*.

The return on total assets shows whether management is efficient in using available resources to get profit.

$$\text{Return on total assets} = \frac{\text{net income}}{\text{average total assets}}$$

In 20X2, the return is:

$$\frac{\$8}{(\$227 + \$204)/2} = 0.037$$

In 20X1, the return was .077. There has been a deterioration in the productivity of assets in generating earnings.

The *return on equity* (ROE) reflects the rate of return earned on the stockholders' investment.

$$\text{Return on common equity} = \frac{\text{net income available to stock holder}}{\text{average stockholders' equity}}$$

The return in 20X2 is: $\frac{\$8}{(\$88 + \$80)/2} = 0.095$

In 20X1, the return was .207. There has been a significant drop in return to the owners.

The overall profitability of the company has decreased considerably, causing a decline in both the return on assets and return on equity. Perhaps lower earnings were due in part to higher costs of short-term financing arising from the decline in liquidity and activity ratios. Moreover, as turnover rates in assets go down, profit will similarly decline because of a lack of sales and higher costs of carrying higher current asset balances. As indicated in Figure 4.8, industry comparisons reveal that the company is faring very poorly in the industry.

Table 4.1 shows return on equity of certain companies compared with industry averages.

Table 4.1: Return on equity

COMPANY	INDUSTRY	OCTOBER 24 2010	INDUSTRY AVERAGE
Boeing (BA)	Aerospace/Defense – Major Diversified	200.1	110.8
Google (GOOG)	Internet Information Providers	20.6	22.5
Toyota (TM)	Auto Manufacturers – Major	4.7	4.8
Nordstrom (JWN)	Apparel Stores	32.7	23.9
Intel (INTC)	Semiconductor – Broad Line	24.4	156.9
Wal Mart (WMT)	Discount, Variety Stores	22.6	20.7

Source: MSN Money Central Investor (<http://moneycentral.msn.com/investor/home.asp>)

How are the company's earnings and market value related?

Market value ratios relate the company's stock price to its earnings (or book value) per share. Also included are dividend-related ratios.

Earnings per share (EPS) is the ratio most widely watched by investors. EPS shows the net income per common share owned. You must reduce net income by the preferred dividends to obtain the net income available to common stockholders. Where preferred stock is not in the capital structure, you determine EPS by dividing net income by common shares outstanding. EPS is a gauge of corporate operating performance and of expected future dividends.

$$\text{EPS} = \frac{\text{net income} - \text{preferred dividend}}{\text{common shares outstanding}}$$

EPS in 20X2 is:

$$\frac{\$8,000}{4,600 \text{ shares}} = \$1.74$$

For 20X1, EPS was \$3.26. The sharp reduction over the year should cause alarm among investors. As you can see in Figure 4.8, the industry average EPS in 20X2 is much higher than that of DELTA, Inc. (\$4.51 per share vs. \$1.74 per share).

Table 4.2 shows EPS of certain companies.

Table 4.2: EPS

COMPANY	INDUSTRY	OCTOBER 24 1 2010
Boeing (BA)	Aerospace/Defense – Major Diversified	4.64
Google (GOOG)	Internet Information Providers	24.71
Toyota (TM)	Auto Manufacturers – Major	3.75
Nordstrom (JWN)	Apparel Stores	2.33
Intel (INTC)	Semiconductors – Broad Line	1.86
Wal Mart (WMT)	Discount, Variety Stores	3.90

Source: MSN Money Central Investor (<http://moneycentral.msn.com/investor/home.asp>)

The *price/earnings (P/E) ratio*, also called *earnings multiple*, reflects the company's relationship to its stockholders. The P/E ratio reflects both the firm's future growth prospects in earnings and the level of risk associated with future earnings. A high multiple (cost per dollar of earnings) is favored since it shows that investors view the firm positively. On the other hand, investors looking for value would prefer a relatively

lower multiple (cost per dollar of earnings) as compared with companies of similar risk and return.

$$\text{Price/earnings ratio} = \frac{\text{market price per share}}{\text{earnings per share}}$$

Assume a market price per share of \$12 on December 31, 20X2, and \$26 on December 31, 20X1. The P/E ratios are:

$$20X2: \frac{\$12}{\$1.74} = 6.9$$

$$20X1: \frac{\$26}{\$3.26} = 7.98$$

From the lower P/E multiple, you can infer that the stock market now has a lower opinion of the business. However, some investors argue that a low P/E ratio can mean that the stock is undervalued. Nevertheless, the decline over the year in stock price was 54% (\$12/\$26), which should cause deep investor concern.

Table 4.3 shows price-earnings ratios of certain companies compared with industry averages.

Table 4.3: P/E ratios

COMPANY	INDUSTRY	OCTOBER 24 2010	INDUSTRY AVERAGE
Boeing (BA)	Aerospace/Defense – Major Diversified	15.3	108.8
Google (GOOG)	Internet Information Providers	24.8	34.2
Toyota (TM)	Auto Manufacturers – Major	19.1	16.5
Nordstrom (JWN)	Apparel Stores	15.8	16.6
Intel (INTC)	Semiconductors – Broad Line	10.7	15.4
Wal Mart (WMT)	Discount, Variety Stores	13.8	15.2

Source: MSN Money Central Investor (<http://moneycentral.msn.com/investor/home.asp>)

Book value per share equals the net assets available to common stockholders divided by shares outstanding. By comparing it to market price per share you can get another view of how investors feel about the business.

The book value per share in 20X2 is:

$$\text{Book value per share} = \frac{\text{Total stockholders' equity} - \text{preferred stock}}{\text{common shares outstanding}}$$

$$= \frac{\$88,000 - 0}{4,600} = \$19.13$$

In 20X1, book value per share was \$17.39.

The increased book value per share is a favorable sign, because it indicates that each share now has a higher book value. However, in 20X2, market price is much less than book value, which means that the stock market does not value the security highly. In 20X1, market price did exceed book value, but there is now some doubt in the minds of stockholders concerning the company. However, some analysts may argue that the stock is underpriced.

The *price/book value ratio* shows the market value of the company in comparison to its historical accounting value. A company with old assets may have a high ratio whereas one with new assets may have a low ratio. Hence, you should note the changes in the ratio in an effort to appraise the corporate assets.

The ratio equals:

$$\text{Price/book value} = \frac{\text{Market price per share}}{\text{Book value per share}}$$

In 20X2, the ratio is:

$$\frac{\$12}{\$19.13} = 0.63$$

In 20X1, the ratio was 1.5. The significant drop in the ratio may indicate a lower opinion of the company in the eyes of investors. Market price of stock may have dropped because of a deterioration in liquidity, activity, and profitability ratios. The major indicators of a company's performance are intertwined (i.e., one affects the other) so that problems in one area may spill over into another. This appears to have happened to the company in our example.

Dividend ratios help you determine the current income from an investment. Two relevant ratios are:

$$\text{Dividend yield} = \frac{\text{dividends per share}}{\text{market price per share}}$$

$$\text{Dividend payout} = \frac{\text{dividends per share}}{\text{earnings per share}}$$

Table 4.4 shows the dividend payout ratios of some companies.

Table 4.4: Dividend payout ratios

COMPANY	INDUSTRY	OCTOBER 24 2010
Boeing (BA)	Aerospace/Defense – Major Diversified	37%
Google (GOOG)	Internet Information Providers	0
Toyota (TM)	Auto Manufacturers – Major	43
Nordstrom (JWN)	Apparel Stores	27
Intel (INTC)	Semiconductors – Broad Line	25
Wal Mart (WMT)	Discount, Variety Stores	29

Source: MSN Money Central Investor (<http://moneycentral.msn.com/investor/home.asp>)

There is no such thing as a “right” payout ratio. Stockholders look unfavorably upon reduced dividends because it is a sign of possible deteriorating financial health. However, companies with ample opportunities for growth at high rates of return on assets tend to have low payout ratios.

Overall, would you invest in this company?

As indicated in the chapter, a single ratio or a single group of ratios is not adequate for assessing all aspects of the firm’s financial condition. Figure 4.4 summarizes the 20X1 and 20X2 ratios calculated in the previous sections, along with the industry average ratios for 20X2. The figure also shows the formula used to calculate each ratio. The last three columns of the figure contain subjective assessments of DELTA’s financial condition, based on trend analysis and 20X2 comparisons to the industry norms. (5-year ratios are generally needed for trend analysis to be more meaningful, however.)

By appraising the trend in the company’s ratios from 20X1 to 20X2, we see from the drop in the current and quick ratios that there has been a slight detraction in short-term liquidity, although they have been above the industry averages. Working capital has improved. A material deterioration in the activity ratios has occurred, indicating that improved credit and inventory policies are required. They are not terribly alarming, however, because these ratios are not way out of line with industry averages. Also, total utilization of assets, as indicated by the total asset turnover, shows a deteriorating trend.

Leverage (amount of debt) has been constant. However, there is less profit available to satisfy interest charges. DELTA’s profitability has deteriorated over the year. In 20X2, it is consistently below the industry average in every measure of profitability. In consequence, the return on the owner’s investment and the return on total assets has gone down. The earnings decrease may be partly due to the firm’s high cost of short-term financing and partly due to operating inefficiency. The higher costs may be due to receivable and inventory difficulties that forced a decline in the liquidity and activity ratios. Furthermore, as receivables and inventory turn over less, profit will fall off from a lack of sales and from the costs of carrying more in current asset balances.

The firm’s market value, as measured by the price/earnings (P/E) ratio, is respectable as compared with the industry. But it shows a declining trend.

In summary, it appears that the company is doing satisfactorily in the industry in many categories. The 20X1-20X2 period, however, seems to indicate that the company is heading for financial trouble in terms of earnings, activity, and short-term liquidity. The business needs to concentrate on increasing operating efficiency and asset utilization.

Figure 4.8: DELTA, Inc. Summary of Financial Ratios - Trend and Industry Comparisons

Ratios	Definitions	20X1	20X2	Industry	Ind	Evaluation	
						Trend	Overall
LIQUIDITY							
Net working capital	Current assets - current liabilities	63	68	56	good	good	good
Current Ratio	Current assets/current liabilities	2.26	2.21	2.05	OK	OK	OK
Quick (Acid-test) ratio	(Cash + marketable securities + accounts receivable)/current liabilities	1.34	1.27	1.11	OK	OK	OK
ASSET UTILIZATION							
Accounts receivable turnover	Net credit sales/average accounts receivable	8.46	4.34	5.5	OK	poor	poor
Average collection period	365 days/accounts receivable turnover (days)	43.1	84.1	66.4	OK	poor	poor
Inventory turnover	Cost of goods sold/average inventory	1.33	1.05	1.2	OK	poor	poor
Average age of inventory	365 days/inventory turnover (days)	274.4	347.6	N/A	N/A	poor	poor
Operating cycle	Average collection period + average age of inventory (days)	317.5	431.7	N/A	N/A	poor	poor
Total asset turnover	Net sales/average total assets	0.57	0.37	0.44	OK	poor	poor
SOLVENCY							
Debt ratio	Total liabilities/total assets	0.61	0.61	N/A	N/A	OK	OK
Debt-equity ratio	Total liabilities/stockholders' equity	1.55	1.58	1.3	poor	poor	poor
Times interest earned	Income before interest and taxes/interest expense (times)	13.5	7.65	10	OK	poor	poor

Ratios	Definitions	20X1	20X2	Industry	Ind	Evaluation	
						Trend	Overall
PROFITABILITY							
Gross profit margin	Gross profit/net sales	0.43	0.35	0.48	poor	poor	poor
Profit margin	Net income/net sales	0.14	0.1	0.15	poor	poor	poor
Return on total assets	Net income/average total assets	0.077	0.037	0.1	poor	poor	poor
Return on equity(ROE)	Earnings available to common stockholders/ avg. stockholders' equity	0.207	0.095	0.27	poor	poor	poor
MARKET VALUE							
Earnings per share(EPS)	(Net income -preferred dividend)/ common shares outstanding	3.26	1.74	4.51	poor	poor	poor
Price/earnings (P/E) ratio	Market price per share/EPS	7.98	6.9	7.12	OK	poor	poor
Book value per share	(Total stockholders' eqty - Preferred stock)/ common shrs outstanding	17.39	19.13	N/A	N/A	good	good
Price/book value ratio	Market price per share/book value per share	1.5	0.63	N/A	N/A	poor	poor
Dividend yield	Dividends per share/market price per share						
Dividend payout	Dividends per share/EPS						

(a) Obtained from sources not included in this chapter

(b) Represent subjective evaluation

Bankruptcy prediction model

The Z-Score model evaluates a combination of several financial ratios to predict the likelihood of future bankruptcy (financial distress). Using a blend of the traditional financial ratios and multiple discriminant analysis, Altman developed a bankruptcy prediction model that produces a Z score as follows:

$$Z = 1.2 * X_1 + 1.4 * X_2 + 3.3 * X_3 + 0.6 * X_4 + 0.999 * X_5$$

where X_1 = Working capital/Total assets

X_2 = Retained earnings/Total assets

X_3 = Earnings before interest and taxes (EBIT)/Total assets

X_4 = Market value of equity/Book value of debt (or Net worth for *private firms*)

X_5 = Sales/Total assets

Altman also established the following guideline for classifying firms:

Z SCORE	PROBABILITY OF FINANCIAL DISTRESS
1.8 or less	Very high
1.81 - 2.99	Not sure
3.0 or higher	Unlikely

Example 1

Davidson Company has the following financial data selected from its financial statements:

Working capital = \$400	Total assets = \$2,000
Retained earnings = \$750	EBIT = \$266
Sales = \$3,000	Market value of equity = \$1,425
Book value of debt = \$1,100	

The calculation of Davidson's Z score is shown below.

$$\begin{array}{rcl}
 X_1 = 400/2,000 & & \times 1.2 = 0.240 \\
 X_2 = 750/2,000 & & \times 1.4 = 0.525 \\
 X_3 = 266/2,000 & & \times 3.3 = 0.439 \\
 X_4 = 1,425/1,100 & & \times 0.6 = 0.777 \\
 X_5 = 3,000/2,000 & & \times 0.999 = 1.499 \\
 & & \underline{Z = 3.480}
 \end{array}$$

Since Davidson's Z score of 3.480 is well into the "unlikely" zone, there is virtually no chance that Davidson will go bankrupt within the next two years.

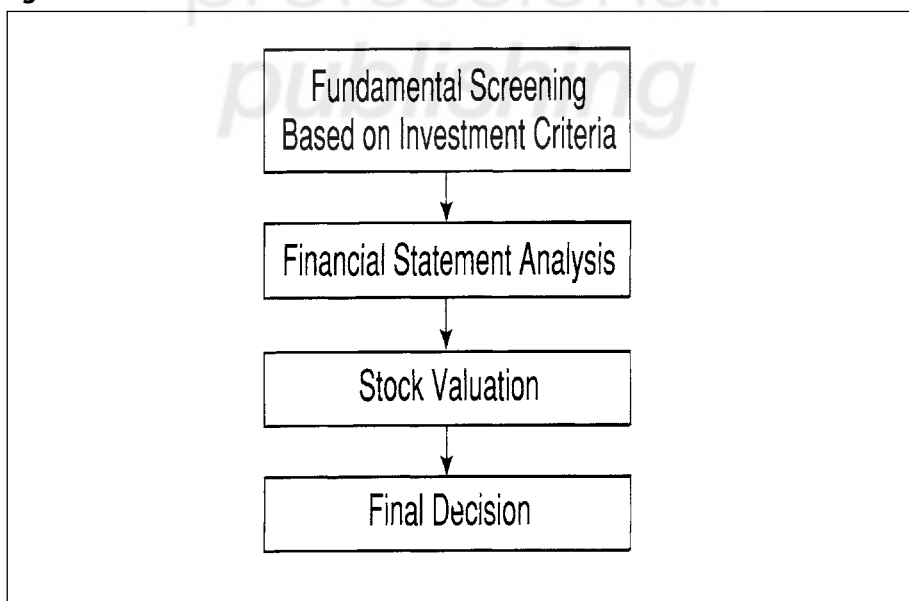
A systematic approach for stock picking

Fundamental stock analysis can be broken down into two categories--*screening* and *valuation*. Screening refers to the act of searching through a large universe of securities to locate a few that might hold promise and warrant further analysis. Valuation (to be discussed in detail in Chapter 7), on the other hand, refers to taking one company and applying a series of valuation models to determine if the current price can be considered fair.

A more practical, systematic approach to stock picking would start with building a list of potential candidates through screening. Screening would be based on some predetermined criteria such as your investment objectives, philosophy, risk tolerance level, and return needs. The next step is a narrow-down step. You want to investigate a list of serious candidates using techniques such as financial ratio analysis. In this process, you hope to be able to form future earnings expectations and appreciation potential of a company. Next, determine what you feel the stock is worth, applying a series of valuation models. Finally, you come to a final decision based on your determination of the stock's worth relative to the current market price.

Figure 4.9 is a flow-chart representation of a systematic approach for picking a stock.

Figure 4.9



Technical Analysis

Fundamental analysis is used primarily to select *what* to invest in, while technical analysis is used to help decide *when* to invest in it. Technical analysts attempt to offer guidelines on investment timing. They look at price (and volume) movements in the market for clues as to when to buy or sell. They pay particular attention to market indexes and averages and to “charting” price movements of individual stocks.

What is technical analysis?

Will it go up? Will it go down? Does history really repeat itself? Every investor is searching for the answers to these questions. Technical analysts believe that history repeats itself. Technical analysis concentrates on changes of a security, on a daily, weekly, monthly, and yearly basis. There are a number of primary assumptions underlying technical analysis:

1. Market action discounts everything.
2. History repeats itself.
3. Supply and demand determine market price.
4. Prices move in trends.

Supply and demand have a lot to do with the price of the security. The direction of the market is very important. If demand is greater than supply, prices will go up. If demand is less than supply, then prices will fall. There is no purpose in trying to foretell which way the market will go, because there are too many circumstances that sway the market, and by the time you discover the reason the market will change again. It is an advantage to know the reason behind fluctuations in the economy, but it is not essential.

The stock market is dictated 85 percent by psychology and only 15 percent by economics. Investors and traders will react the same way each time there is a rise or a fall in the market. It is reasonable to conclude, that as price go up, investors and traders

will buy, and as prices drop, investors and traders will sell. This cycle will continue due to the vast majority that will behave in this manner.

Technicians believe that a stock will continue in the same direction until it is interrupted by an outside source. A price trend does not change its direction until it is influenced by the market action.

What are the tools of technical analysis?

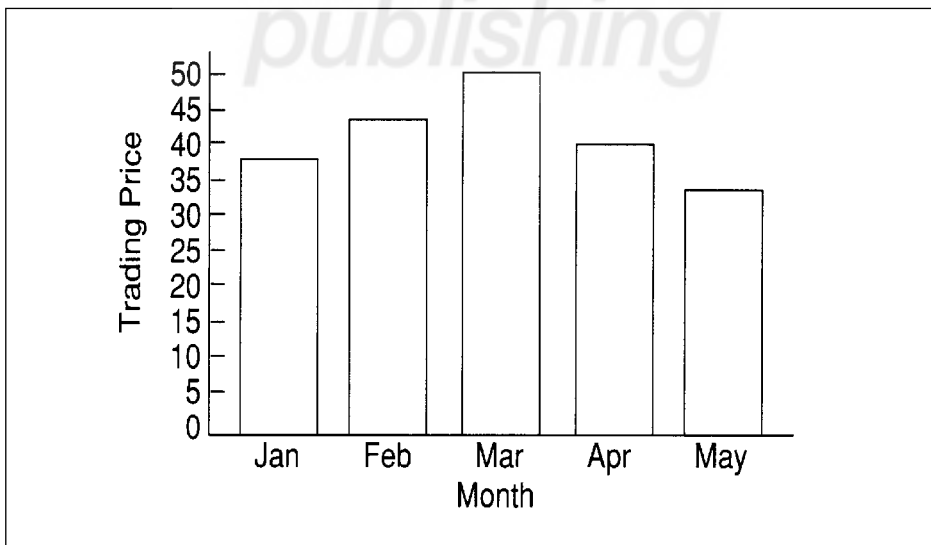
Technical analysts believe the market can be predicted in terms of direction and magnitude. They study the stock market by way of *charting* and using various *indicators* to project future market movements. Stock prices of companies tend to move with the market because they react to various demand and supply forces. The technical analysts try to predict short-term price changes and then recommend the timing of a purchase and sale. They attempt to uncover a consistent pattern in prices or a relationship between stock price changes and other market data. Technical analysts also look at charts and graphs of internal market data including prices and volume.

Figure 5.1 reflects the movement in the price of a company's stock.

You should be familiar with some of the terms used in technical analysis:

- ▶ *Momentum*: The rate of change of a stock price or market index over a period of time.
- ▶ *Accumulation*: A price rise on a large volume of stock that is moving from "weak hands" to "strong hands."

Figure 5.1: Sample company stock chart: ACME MOTOR CO. STOCK



- ▶ *Distribution*: A price decline on a large volume of stock that is moving from “strong hands” to “weak hands.”
- ▶ *Consolidating phases*: Time periods during which prices move within a narrow band.
- ▶ *Resistance phases*: Time periods during which prices move with difficulty.
- ▶ *Bellwether stocks*: Stocks that accurately reflect the condition of the market (IBM, for example).

The Dow Theory

The foundation for technical analysis is the Dow Theory. The theory claims that stock market direction must be confirmed by both averages – the *Dow Jones Industrial Average* and the *Dow Jones Transportation Average*. A strong market – bullish or bearish – is one in which both averages are moving in the same direction.

The market is assumed to have three movements at the same time: day-to-day fluctuations, secondary movements (3 weeks to 3 months), and primary trends (28 weeks to 33 months). According to the theory, secondary movements and daily fluctuations are only important to the extent that they reflect a long-term primary trend in the market. Primary trends may be characterized as either bullish or bearish. Figure 5.2 displays the Dow Theory to analyze a market trend. It is seen that the primary movement in the market is positive despite two secondary movements that are downward. The point is that each low of the secondary movement is higher than the previous low and each high is higher than the previous high. This tends to confirm the primary trend, which is bullish.

In a nutshell, the Dow Theory implies a strategy:

1. Buy when the market goes higher than the last peak.
2. Sell when it goes below the preceding valley.

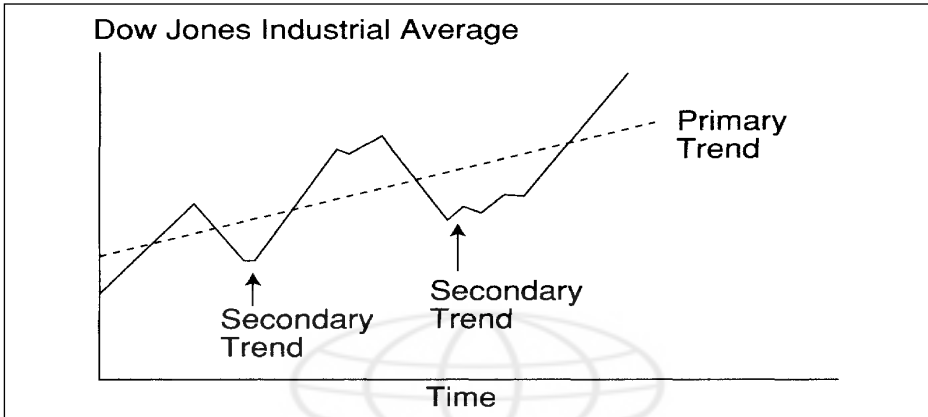
Here is the rationale of the Dow Theory: the market is up when the cyclical movements of the market averages increase over time and the successive market lows get higher; the market is down when the successive highs and successive lows in the stock market are lower than the previous highs and lows.

It applies to individual stocks and to the overall market. One limitation of this theory is that it is an after measure having no forecasting ability. It does not predict when a reversal will take place but merely confirms that the reversal has occurred.

Many Dow believers contend that the action of the Dow Jones Transportation Average must confirm the action of the Dow Jones Industrial Average before a true bull or bear market signal is posted. Others believe the use of the Transportation Average in this manner has lost much of its validity, since these two averages will not usually follow the same pattern.

There are two primary tools of technical analysts. They are *charting* and *key indicators*.

Figure 5.2: Dow Theory chart



What is charting?

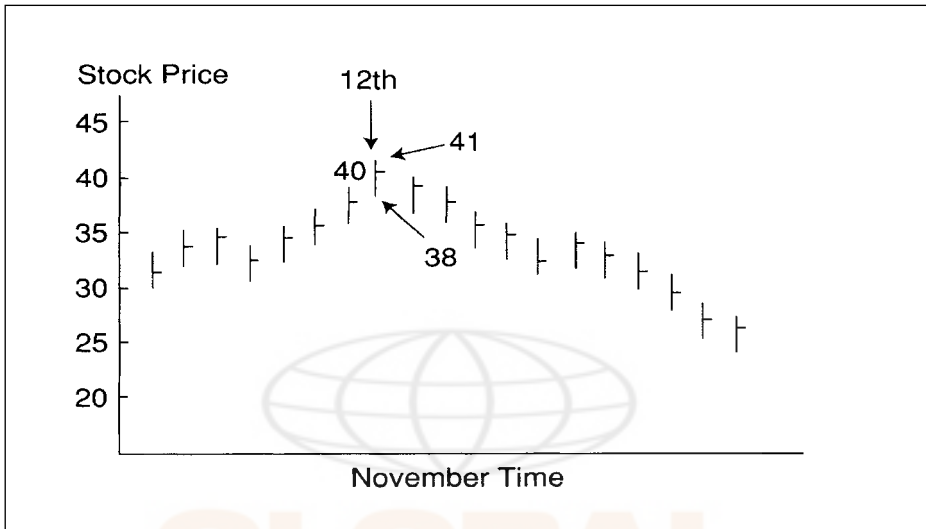
In deciding whether to buy a particular security or when evaluating market conditions, a technical analyst, often called a *chartist*, usually turns to charting. Charting means plotting the stock's price movement over time on a graph. For example, the security moves up and down in price, but has remained within a band bounded by the lower limit (support level) and the higher limit (resistance level). Chartists think that once a stock breaks through such a level (e.g., falls below the support level), then it is likely to decline considerably further. Similarly, if the price were to penetrate above the resistance level, it would be an indication that the price will continue to rise. Some chartists think a "head and shoulders" formation indicates that a stock has peaked (top form) and will start to fall; an inversion of this pattern would indicate that a stock has bottomed out and is ready to rise. In order to interpret charts you must be able to analyze formations and spot buy and sell indicators. Note, however, that different analysts looking at the same chart pattern may come up with different interpretations.

What types of chart may be used?

The two basic types are *bar* and *point-and-figure*. Bar charts record the high and low, the close, and volume over time. The vertical lines show price and the horizontal line shows time. Vertical lines appear at each time period, and the top and bottom of each

bar shows the high and low prices. A horizontal line across the bar marks the ending price (see Figure 5.3).

Figure 5.3: Bar chart



While bar charts plot transactions according to time (that is, hourly, daily, weekly, monthly), point-and-figure charts plot price changes only and are independent of time. The focus of point-and-figure charts is on reversal patterns. They consider just the closing prices of significant price moves, and attempt to show emerging price patterns in the market in general or for specific stocks. A rise in price is noted by an X while a decrease is shown as an O. The chart will only show that the stock moved up one point and does not tell you how long it takes the stock to move up one point. The purpose of this chart is to clarify a trend without regard to how long that trend will be, or has been, in effect.

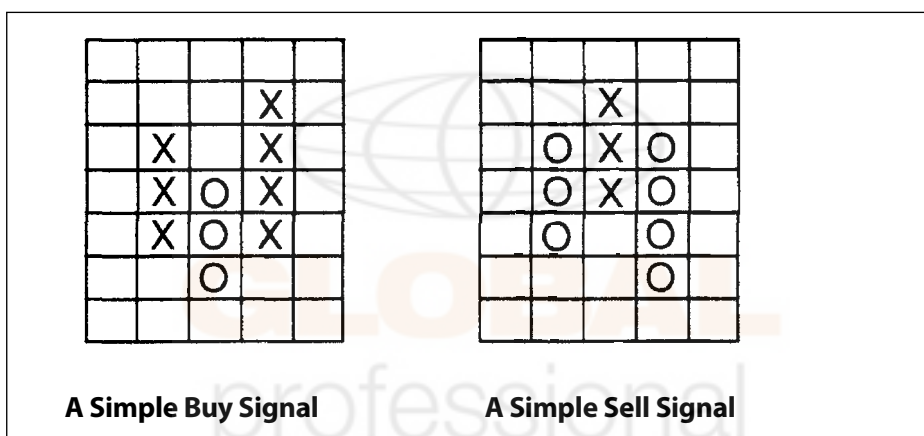
In point-and-figure charts, there is a vertical price scale. Plots on the chart are made when a price changes by a predetermined amount. Significant price changes and their reversals are depicted. What is significant is up to the individual technical analyst. The analyst can use either ending prices or interday prices, depending on time constraints. The usual predetermined figures are 1 or 2 points for medium-priced stocks, 3 or 5 points for high-priced stocks, and $\frac{1}{2}$ point for low-priced stocks. Most charts contain specific volume information. Analysts should plot prices representing a trend in a single column, moving to the next column only when the trend is reversed. They will usually round a price to the nearest dollar and start by plotting a beginning rounded price. Nothing new appears on the chart if the rounded price does not change. If a different rounded price occurs, the analysts plot it. If new prices continue in

the same direction, they will appear in the same column. A new column begins when there is a reversal. Notice there is no time dimension. A column of X's shows an upward price trend while a column of O's reveals a downward price trend. One simple rule with point-and-figure charts is:

1. A buy signal when an up (X) column goes above a previous up (X) column.
2. A sell signal is when a down (O) column goes below a previous down (O) column.

Figure 5.4 shows simple point-and-figure chart signals.

Figure 5.4: Point-and-figure chart



Note: There is another form of charting, known as *candlesticks*, which has been used in Japan.

You can use these charts to determine whether the market is in a major upturn or downturn and whether the trend will reverse. You can also see what price may be accomplished by a given stock or market average. Further, these charts can help you predict the magnitude of a price swing.

What are moving averages?

You can use moving averages to evaluate intermediate – and long-term stock movements by averaging a portion of the series and then adding the following number to the numbers already averaged, omitting the first number, and obtaining a new average, as shown in Table 5.1. A moving average shows the underlying direction and magnitude of change of very volatile numbers.

Table 5.1: Moving average

DAY	INDEX	THREE-DAY MOVING TOTAL	THREE-DAY MOVING AVERAGE
1	111		
2	132		
3	123	366 (Days 1-3)	122 (366/3)
4	108	363 (Days 2-4)	121 (363/3)

By examining the movement of short-term average prices compared to the long-term moving average of prices, you can foresee a reversal in a major uptrend in price of a particular security or the general market. A 200-day moving average is a standard measure for a long-term moving average. A short-term moving average may be 1, 2, or 5 days.

The general rule says:

1. Buy when the short moving average rises above the long term.
2. Stay in the market until the short-term average falls below the long-term average; and then either move out of the market or sell short.

What do support and resistance levels show?

Point-and-figure charts provide data about substance and resistance levels (points). Breakouts from resistance levels indicate market direction. The longer the sideways movement before a break, the more the stock can increase in price.

Support and resistance levels are the most important building blocks in practical technical analysis. A support level (a price “floor”) is the lower end of a trading range; a resistance level (a price “ceiling”) is the upper end. The “channel” is the area of the chart between the support level and resistance level. Figure 5.5 shows an example of a typical channel. Support may occur when a stock goes to a lower level of trading because new investors may now want to purchase it. If so, new demand will occur in the market. Resistance may take place when a security goes to the high side of the normal trading range. Investors who purchased on an earlier high may view this as a chance to sell the stocks at a profit. When market price goes above a resistance point or below a support point (in a “trading range breakout”) investors assume the stock is trading in a new range and that higher or lower trading values are imminent.

Some basic rules suggest:

1. Buy when a stock is trading in a channel running sharply upward and currently trading near the low end of that channel, or when a stock has been trading in a sideways channel and finally trades over its resistance level.

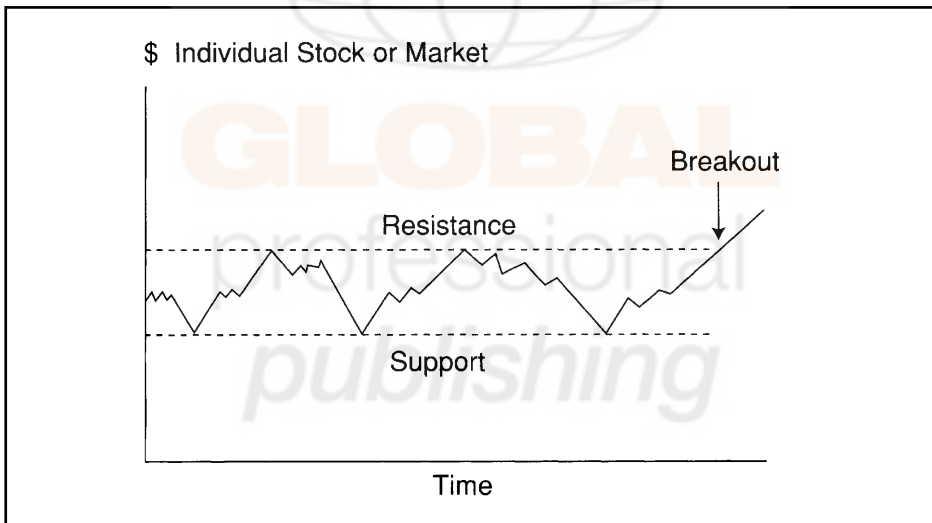
2. Sell when a stock is trading in a downward channel or a stock's price goes below a support level.

Note: There is strong statistical evidence showing that simple trading rules – moving averages and support and resistance levels – have the power to predict future price changes.

What is relative strength analysis?

Evaluating relative strength – a measure of price trend to an overall market and/or industry index – helps you predict individual stock prices. Here you buy and hold those stocks that are acting well, that is, outperforming the general market and/or industry indices in the recent past. By the same token, the stocks that act poorly relative to the market should be averted or even sold short.

Figure 5.5: Support and resistance



Relative strength for a security may be computed:

$$\frac{\text{Monthly Average Stock Price}}{\text{Monthly Average Market (or Industry Group) Index}}$$

An increase in this ratio means that the company's stock is performing better than the overall market or industry.

A relative strength index (RSI) may be computed as follows:

$$RSI = 100 - \frac{100}{1 + RS}$$

where

$$RS = \frac{\text{Average of Up Closing Prices}}{\text{Average of Down Closing Prices}}$$

Example 1

Assume that you are interested in the relative strength for the period of one month, which has 20 exchange days. The trading data follow (the U stands for an increase and D stands for a decrease):

Day:	1	2	3	4	5	6	7	8	9	10
Price:	10U	3D	4D	5U	2U	4D	6U	1D	6D	7U
Day:	11	12	13	14	15	16	17	18	19	20
Price:	8U	3D	5U	6D	1D	3D	4U	1D	3U	2U

$$RS = \frac{52U/10}{32D/10} = \frac{5.2}{3.2} = 1.625$$

$$RSI = 100 - \frac{100}{1 + RS} = 100 - 38.10 = 61.90$$

In general, you look to be invested in stocks with improving relative strength. Note, however, that the RS is best used as a valuable complement to other stock-picking tools.

Note: Investment reports, such as the *Value Line Investment Survey*, provide relative strength information on companies.

Public versus computer charting

There are several hundred software products offering some variation of technical analysis, including charting. On-line services and computer charting are increasingly popular at a more and more affordable cost. Furthermore, there exist many printed (or published) chart services that cover a wide variety of securities traded on the major exchanges, available at many libraries and brokerage houses. Examples of published sources are *Standard and Poor's Trendline* (Standard & Poor's, (212) 208-8792) and *Daily Graphs* (William O'Neil and Co., (310) 820-2583). Published services are mostly dated to a certain degree and limited in their coverage of stocks. They offer one important advantage, however: They allow you to quickly scan a broad number of issues and interpret developing trends.

What do you do with key indicators?

Key indicators of market and stock performance include trading volume, market breadth, *Barron's* Confidence Index, mutual fund cash position, short selling, odd-lot theory, and the Index of Bearish Sentiment.

Why is price-trading volume important?

Significant price increases and decreases are often accompanied by heavy trading volume. Tracking volume indicates the health of the security. Price follows volume. For example, we expect to have increased price on increased volume. You may have a buying opportunity when a security's price begins to rise with increasing volume. This may indicate that the investment community looks favorably upon the stock.

Increasing price of a stock on heavy volume is considered to be a much more positive sign than increasing price on light volume. The idea is that low volume means an absence of buyers, as sellers are always present. By the same token, decreasing price on heavy volume is a more ominous sign than decreasing price on low volume. Trading volume of the overall market and individual stocks can be found in the financial pages of daily newspapers as well as financial newspapers (e.g., *Barron's*).

Why is market breadth relevant?

Market breadth is an indicator which takes into account the number of issues which are higher versus the number of issues which are lower. It can be useful as an advance indicator of major stock price declines and advances. The Breadth Index is determined as follows:

$$\frac{\text{Number of Net Advances or Declines in the Stock Market}}{\text{Number of Securities Traded}}$$

Relevant data can be found in *The Wall Street Journal*. If, over time, the figure is positive (advances exceed declines), the situation is bullish. A strong market is one that shows net advances. The degree of strength is based on the spread between the number of advances and the number of declines.

Example 2

Assume on Monday the following market diary:

Issues traded	1,425
Advances	920
Declines	312
Unchanged	75
New highs	94
New lows	26

The net advancing issues is 608 (920 – 312). The index is $608/1425 = .427$.

The higher the plus percentage, the more positive the market. Breadth analysis focuses on change rather than level. Once you have determined the Breadth Index, you should chart it against a market average such as the Dow Jones Industrial. Typically, they will move together. The Breadth Index for the current year may also be compared to that of a base year.

You can also use market breadth to examine individual securities. Net volume (rises in price minus decreases in price) is determined.

Example 3

Assume IBM trades 110,000 shares for the day, with 70,000 on the upside (rising in price), 30,000 on the downside (falling in price), and 10,000 showing no change. The net volume difference at day's end is 40,000 between the price trend and the net volume of IBM. When a divergence takes place, we can expect a reversal of the price trend. When price decreases, we know that accumulation is occurring.

What is Barron's Confidence Index and how is it used?

Barron's Confidence Index analyzes the trading trend of investors in bonds. You can use it to ascertain when to purchase and sell stocks. This index presumes that bond traders are more knowledgeable than stock traders and recognize trends sooner. If we know what bond traders are doing today, we can predict what stock traders will be doing next. Many believe that there is a lead time of several months between the Confidence Index and what happens with the stock market. The index is published weekly in *Barron's*. The index is computed as follows:

$$\frac{\text{Yield on Barron's 10 top - grade Corporate Bonds}}{\text{Yield on Dow Jones 40 Bond Average}}$$

Example 4

If the Dow Jones yield is 15 percent while the *Barron's* yield is 14 percent, the Confidence Index is 93.3 percent ($14\%/15\%$).

The numerator has a lower yield compared to the denominator since it consists of higher-quality bonds. Less risk means less return. Because top-grade bonds have lower yields than lower-grade bonds, the index will be less than 100 percent. The trading range is typically between 75 and 95 percent. If bond investors are bullish, yield difference between the high-grade and low-grade bonds will be minimal; in this case the index may approach 95 percent.

If markets are bearish, bond investors will desire high-quality issues. Some investors desire a high yield for the greater risk. The Confidence index will now decline, because the denominator will be getting larger. If much confidence exists, investors are

likely to buy lower-quality bonds. In consequence, the yield on high-grade bonds will decrease while the yield on low-grade bonds will increase.

What are the contrarian indicators?

A “contrarian” is an investor who buys when the majority sells, and who sells when the majority buys. Indicators reflecting a contrarian view include mutual fund cash positions, the short interest ratio, the odd-lot trading indicator, and the index of bearish sentiment.

Why is the amount of cash held by the mutual funds revealing?

The purchasing pattern of mutual funds is often an indicator of the purchasing potential of large institutional investors. It is measured by the ratio of mutual fund cash and cash equivalent to total assets provided monthly by the Investment Company Institute. Changes in the figures show institutional portfolio management thinking. The ratio usually hovers between 5 and 25 percent. When a mutual fund’s cash position is large, you would think mutual fund managers must have a bearish outlook on the market. However, it is a contrarian indicator. To a technical analyst, the higher the cash percentage, the more bullish the general market outlook. When this cash is invested in the market, stock prices will increase. In other words, high mutual fund cash positions represent pent-up demand. A low cash balance is a bearish sign.

What is the short interest ratio?

Short selling takes place when investors believe stock prices will decline. Some analysts believe that an increase in the number of short sellers indicates a bullish market. It is believed that short sellers get emotional and overreact. Also, the short seller will later purchase the short-sold stock. Increased short sales and increased market activity will create additional market supply. Then, when the market goes down, the short sellers will buy back their shares, and this will produce increased market demand.

The short-interest ratio is:

$$\frac{\text{Number of Stocks Sold Short for the Month}}{\text{Daily Average Volume for the Month}}$$

A high ratio is bullish and a low ratio is bearish. In the past, the ratio for all stocks on the New York Stock Exchange has hovered between 1.0 and 1.65. A short-interest ratio of 2.0 or greater would indicate a market low. Note: The short interest is reported weekly in The Wall Street Journal and Barron’s.

Why look at short sales by specialists?

Watch short sales positions of specialists, measured by the ratio:

$$\frac{\text{Specialists' Short Sales}}{\text{Total Short Sales on an Exchange}}$$

Example 5

If specialists sell 100,000 shares short in a week and the total number of short sales is 400,000, the specialists' sales constitute 25 percent. Specialists keep a book of limit orders on their securities, so they are knowledgeable as to market activity at a particular time. However, if most of their short sales are covered, this is a bullish sign.

A normal ratio is approximately 55 percent. A ratio less than 40 percent is bullish.

What is the odd-lot trading indicator?

The odd-lot theory operates on the same premise – the rule of contrary opinion. Odd-lot trading reflects popular opinion. In other words, you will determine what losers are doing and then you will do the opposite. In other words, knowledgeable investors should sell when the small traders (odd-lot sellers) are buying and buy when they are selling, since they believe that the small investor is usually wrong.

Odd-lot trading data are published in *The Wall Street Journal* and *Barron's*. Volume is usually expressed in number of shares rather than dollars. Some technical analysts use the SEC *Statistical Bulletin*, however, in which volume is given in dollars.

An odd-lot index is:

$$\frac{\text{Odd-Lot Buys}}{\text{Odd-Lot Sells}}$$

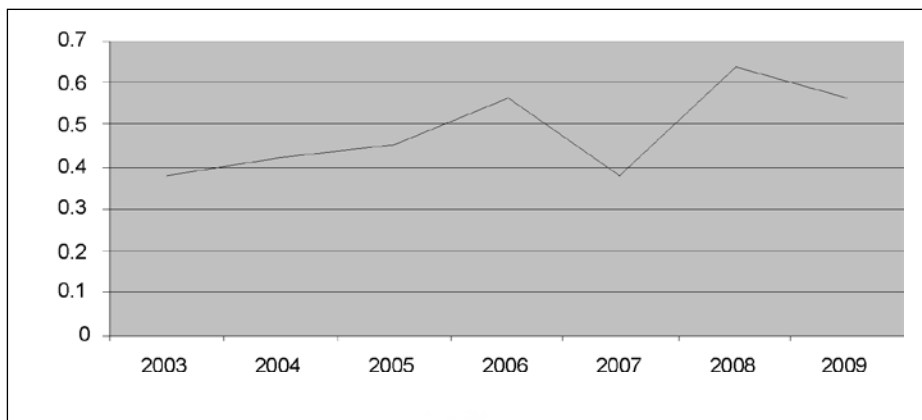
This ratio usually fluctuates between .40 and 1.60 (see Figure 5.6).

Example 6

Assume that on a particular day, 186,526 odd-lot shares are bought and 382,020 shares are sold. The odd-lot index is .488 (186,526/382,020).

You should also examine odd-lot short sales. Many odd-lot short sale ratio of around .5 percent indicates optimism; a ratio of 3.0 or more reflects pessimism.

Note: Stock market research does not fully support the odd-lot theory. In fact, studies showed that the small investor was correct more frequently than institutional investors.

Figure 5.6: Ratio of odd-lot purchases to sales (plotted inversely)

What is the Index of Bearish Sentiment?

This index is based on a reversal of the recommendations of investment advisory services as contained in their newsletters. The Index of Bearish Sentiment is:

$$\frac{\text{Number of Bearish Services}}{\text{Number of Services Giving an Option}}$$

This index operates according to the contrary opinion rule: Whatever the investment advisory service recommends, you should do the opposite. The reasoning of Investors Intelligence is that the advisory services are trend followers rather than anticipators. Therefore, the services' least bearish reports mean the market will drop, and their most bearish reports mean the market will increase.

The general rule is: When 42 percent or more of the advisory services are bearish, the market in fact will increase. If 17 percent or less of the services are bearish, the market will decrease. This index is found in *Barron's*.

Example 7

Of 350 investment advisory services, 225 of them are bearish on the stock market, the index equals 64 percent (225/350). Since 64 percent are pessimistic about the market, or more than the 42 percent benchmark, you should buy securities.

Are puts and calls revealing?

A put is the right to sell a stock at a fixed price by a specified date. One put is for 100 shares. A call is the right to buy a stock at a fixed price by a certain date. The investor

expects the stock's price to appreciate. A sizable gain is possible from a minimal investment, but the entire investment amount is lost if the stock price does not go up.

Option trading activity may help you predict market trends. The put-call ratio equals put volume divided by call volume. The ratio increases due to more put activity from pessimism around the market bottom. The ratio decreases due to more call activity from investor optimism around the market peak.

The option buy (initial option transaction establishing a long position) call percentage looks at open buy call transactions to total call volume. Investor optimism is reflected in a high ratio, while trader caution is indicated in a low ratio.

What does Chicago Board Options Exchange Volatility Index (VIX) represent?

Vix is a popular measure of the implied volatility of S&P 500 index options; often called the *fear index* or *fear gauge*. The index represents one measure of the market's expectation of volatility over the next 30 day period. A high value corresponds to a more volatile market and therefore more costly options, which can be used to defray risk from volatility. It is a contrarian indicator. For contrarian investors, the fear gauge, when it reaches extreme levels, is seen as likely to pull back the other way much like an over-extended elastic.

A caveat

Technical analysis deals with charts, strengths, different patterns of trends, and a good number of indicators. However, the main thing to remember with technical analysis is that one indicator is never enough; a conclusion should be confirmed by other indicators, because:

1. There are many disagreements and contradictions in charting interpretations.
2. The use of a technical indicator has produced mixed results in predicting future performance.

Note: There are many other technical indicators, such as the *Arms Index*, the *McCellan Oscillator*, *Fibonacci stochastics*, and the *Summation Index*. They are not discussed here because they are usually beyond the needs of average investors.

Technical analysis by PC

Technical analysis is well suited to computerization, since it involves the manipulation of a large amount of data. Technical analysis software allows you to quickly obtain data, plot it, and apply various technical indicators, such as *moving averages*.

Technical analysis programs vary widely in the types of indicators they provide. They may emphasize the analysis of a particular market or security type and provide those indicators most suited for that type of analysis. For example, the *Technician*, by Equis, is geared for the analysis of the overall direction of the market and contains a different set of indicators than its sister program *MetaStock*, which is a more general technical analysis tool.



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Common Stocks and Preferred Stocks



Securities cover a broad range of investment instruments, including common stocks, preferred stocks, bonds, and options. There are two broad categories of securities available to investors: equity securities, which represent ownership of a company, and debt securities, which represent a loan from the investor to a company or government. Each type of security has not only distinct characteristics, but also advantages and disadvantages which vary by investor.

What is common stock?

Common stock is a security that represents an ownership interest in a corporation. This ownership interest is evidenced by a transferable stock certificate. For example, if you hold 5,000 shares of ABC Corporation, which has 100,000 shares outstanding, your ownership interest is 5 percent. Each share is a fractional ownership interest in a corporation. You acquire an equity interest in the corporation by buying its stock. As a stockholder, you can vote for the board of directors of the corporation. The equity investment has no maturity date. Common stock return comes in the form of dividend income and appreciation in the market price of stock.

The corporation's stockholders have certain rights and privileges including:

1. *Control of the firm.* The stockholders elect the firm's directors who in turn select officers to manage the business.

2. *Preemptive rights.* This is the right to purchase new stock.

A preemptive right entitles a common stockholder to maintain his or her proportional ownership by offering the stockholder an opportunity to purchase, on a pro rata basis, any new stock being offered or any securities convertible into common stock.

(a) Value of right "cum rights"

$$\text{Value of Right} = \frac{\text{Market Price (M)} - \text{Subscription Price (S)}}{\# \text{ of Rights Required (N)} + 1}$$

(b) Value of right "ex-rights"

$$\frac{\text{Adjusted M} - \text{S}}{\text{N}}$$

Example 1

If a stock is selling for \$60 and 2 rights are required to purchase a single share at the subscription price of \$51, the value of a single right would be $(\$60 - \$51) / (2 + 1) = \$3$. If the stock is now "ex-rights" its market value should reflect that and be $\$60 - \3 or $\$57$. Thus we have $(\$57 - \$51) / 2 = \$3$.

3. *Voting rights.* Shareholders have rights to vote on all important matters affecting them:
- ▶ Alterations to the corporate charter
 - ▶ Mergers and acquisitions
 - ▶ Recapitalization (e.g., an exchange of bond for stock)
 - ▶ Financial reorganization
 - ▶ Election of the board of directors

What are the characteristics of common stock?

The characteristics that make common stock an attractive investment alternative can be summarized as follows:

1. Common stocks provide an ownership feature, as compared with fixed income securities such as bonds, which do not.
2. Common stocks provide an income potential not only in terms of current income in the form of dividends but also future capital gain (or loss).
3. Common shareholders can participate in the firm's earnings and lay claim to all the residual profits of the entity.
4. Common stock can be a good inflation hedge, if the total return from investment in common stock exceeds the rate of inflation.

5. Because there are a variety of stocks available, as discussed above, the investor may choose from a broad spectrum of risk-return combinations from common stock investment.

Table 6.1 summarizes characteristics of common stock.

Table 6.1: Characteristics of common stock

Voting rights	One vote per share
Income	Dividends; not fixed
Capital gain/loss potential	Yes
Price stability	No
Inflation hedge	Yes
Preemptive right	Yes
Priority of claim	Residual after all other claims paid
Unit of purchase	Usually in units of 100 shares

Some key terms regarding common stock are as follows:

1. *Par value.* Par value represents a stock's legal capital. It is an arbitrary value assigned to stock before it is issued. Par value represents a shareholder's liability ceiling because, as long as the par value has been paid in to the corporation, the shareholders obtain the benefits of limited liability. Traditionally set at a low price partly for tax purposes; a corporation may also issue no-par stock.
2. *Book value.* The net worth (assets minus liabilities) of the corporation divided by the number of shares outstanding.

$$\text{Book Value} = \frac{\text{Assets} - \text{Liabilities}}{\text{Number of Shares Outstanding}}$$

3. *Market value.* Currently quoted price of a share of stock in the market. The market value or capitalization of a firm is its stock price times the number of shares outstanding. The ratio of a stock's market price to its book value (Price/book ratio) gives an indication of how investors regard the company. Dividing the share price by the book value gives a market/book ratio, and thus the higher the ratio, the more expensive the stock price (compared with its book value).
4. *Cash Dividends.* Cash dividends are paid to investors if and when declared by the Board of Directors. Important dates to remember:
 - (a) Declared date - the date on which the Board declares the dividend.
 - (b) Record Date - investors registered on the corporate books on the record date (set by the Board) will receive the dividend.

- (c) Ex-dividend date - the date that a stock will begin trading without the value of the pending dividend factored into its market value; the ex-dividend date is *two business days before the record date*.
- (d) Payable date - the date on which investors on record will receive dividends.

Note: The general sequence of the dividend process should never change: there should first always be a declaration, then an ex-dividend date, followed by a date of record, and finally the date when investors receive the payment. Today, settlement of stocks is T+3, which means that, when you first buy or sell a stock, it takes three days for the change to be entered into the company's record books. If you are not in the company's record books on the date of record, you won't receive the dividend payment. To ensure that you are in the record books, you need to buy the stock at least *three days* before the date of record.

Example 2

Assume the date of record is 11th (Thursday):

	<i>Ex-dividend date</i> ↓		<i>Record Date</i> ↓	
<i>Mon</i>	<i>Tues</i>	<i>Wed</i>	<i>Thurs</i>	<i>Fri</i>
8th	9th	10th	11th	12th

If you buy it on the ex-dividend date (9th), you will not receive the dividend because your name will not appear in the company's record books until Friday (12th). If you want to buy the stock and receive the dividend, you need to buy it on the 8th. If you want to sell the stock and still receive the dividend, you need to sell on the 9th.

5. *Stock dividends.* For example, if XYZ Corp. declares a 5% stock dividend, a holder of 200 shares would receive a stock certificate for 10 additional shares. Most often, firms redeem fractional shares for cash.
6. *Stock splits.* Each old share is equal to some number of new shares. Stock splits do not change the value of the underlying corporation and so the other values are changed proportionately.
7. *Reverse splits.* Each old share is equal to some fraction of a new share.

Example 3

A stock with a par value of \$1 and a market value of \$20 which had a two-for-one stock split would now have twice as many authorized shares. But both the par and market values would be halved. In a one-for-two reverse split, 200 shares of old stock would be 100 shares of the new stock. Both the par and market values would be doubled.

What types of stocks are there?

The stock you buy should be best for your particular circumstances and goals. The types of stock include:

1. *Income stocks.* These stocks are issued by companies having high dividends and a fairly stable stream of earnings. They are desirable if you seek high current income instead of capital growth, and desire less risk. An example is utility companies. Income stocks give you the highest stable income to satisfy your present living needs.
2. *Cyclical stocks.* They are stocks whose price movements follow the business cycle. Firms' prices increase in expansion and decline in recession. These stocks are thus somewhat risky. Examples include construction and airlines.
3. *Defensive stocks.* Often called countercyclical stocks, they are stocks that remain stable during periods of contraction. They are safe and consistent but have a lower return. An example is consumer goods stocks.
4. *Growth stocks.* Growth stocks are companies evidencing higher rates of growth in operations and earnings than other firms. An example is high-technology firms. These stocks normally pay little or no dividends. Growth stocks usually increase in price faster than others, but they may fluctuate more. They appeal to investors seeking capital appreciation rather than dividend income.
5. *Blue chips.* Blue chips are common stocks that provide uninterrupted streams of dividends and strong long-term growth prospects, such as General Electric. These stocks have low risk but are less susceptible to cyclical market changes than other stocks.
6. *Pennystocks.* Penny stocks are stocks which usually have market prices below \$1 a share. Penny stocks issued by financially weak and risky companies.
7. *Speculative stocks.* These stocks are ones for which there is an opportunity for large profits, with uncertainty in earnings. You buy a speculative stock if you are willing to take a high risk for a very high return. Speculative stocks have high price fluctuations and price-earnings ratios. Examples of speculative stocks include mining and biotechnology company stocks.

What is the yield on common stock investments?

Yield is the return for a common stock at its initial cost or present market value. Typically both yields are computed.

$$\text{Yield} = \frac{\text{Dividend Per Share}}{\text{Market Price per Share}}$$

Example 4

You paid \$80 for a stock currently worth \$100. The dividend per share is \$4. The yield on your investment is:

$$\frac{\$4}{\$80} = 0.5 = 5\% \text{ (based on original investment)}$$

$$\text{or } \frac{\$4}{\$100} = .04 = 4\% \text{ (based on market value)}$$

You can use the yield as an indication of the reasonableness of the price of the stock, particularly when dividends are stable (e.g., utilities). Yield on stock is also helpful if you are an income-oriented investor that wishes to compare equity dividend returns with those of fixed income securities.

More exactly, the yield on your stock investment for a single period can be calculated using the formula:

$$r = \frac{D_1}{P_0} + \frac{(P_1 - P_0)}{P_0}$$

where r = expected return for a single period

D_1 = Dividend at the end of the period

P_1 = Price per share at the end of the period

P_0 = Price per share at the beginning of the period

Translated,

$$r = \frac{\text{Dividends}}{\text{Beginning Price}} + \frac{\text{Capital Gain}}{\text{Beginning Price}} = \text{Dividend Yield} + \text{Capital Gain Yield}$$

Note: This formula is derived from the *Gordon's dividend growth model*. To repeat, if a company's dividends are expected to grow at a constant rate, then

$$P_0 = \frac{D_1}{r - g}$$

Solving for r gives:

$$r = \frac{D_1}{P_0} + g \text{ where } g = \frac{(P_1 - P_0)}{P_0} \text{ where for a single period.}$$

Example 5

Consider a stock selling for \$50. The company is expected to pay a \$3 cash dividend at the end of the year, and the stock's market price at the end of the year is expected to be \$55 a share.

Thus, the expected return would be:

$$r = \frac{D_1}{P_0} + \frac{(P_1 - P_0)}{P_0} = \frac{\$3}{\$50} + \frac{(\$55 - \$50)}{\$50} = \frac{(\$3 + \$5)}{\$50} = 6\% + 10\%$$

Or,

Dividend yield = $\$3/\$50 = 6\%$

Capital gain yield = $\$5/\$50 = 10\%$

Total yield = dividend yield + capital gain yield = $6\% + 10\% = 16\%$

What is preferred stock?

Preferred stockholders have preference over common stockholders with respect to dividend and liquidation rights, but payment of preferred dividends, unlike bond interest is not mandatory. In exchange for these preferences, the preferred stockholders give up the right to vote.

Preferred stock is paid quarterly and carries a fixed dividend. The dividend is stated as a percentage of par value of the stock, or in dollar terms per share. Preferred stock is viewed as a hybrid security because it possesses features of both corporate bonds and common stocks. It is similar to common stock in that:

- ▶ It pays dividends.
- ▶ It represents owners' equity.
- ▶ It is issued without stated maturity dates.

Preferred stock is also similar to a corporate bond in that:

- ▶ Its dividends are fixed for the life of the issue.
- ▶ It provides for prior claims on assets and earnings.
- ▶ It can carry convertible and call characteristics and sinking fund provisions.

Preferred stocks are traded on the basis of the yield offered to investors. They are viewed as fixed income securities and, as a result, are in direct competition with bonds in the marketplace. *Note:* Corporate bonds, however, occupy a position senior to preferred stocks.

Advantages of owning preferred stocks are:

- ▶ Relatively higher yields than comparably rated fixed-income securities.
- ▶ Quarterly dividend payments. Bonds pay interest every six months.
- ▶ Safety. Preferred stocks take precedence over common stocks. The preferred stock dividend must be paid before *any* dividends on common stock can be paid. *Note:* Most preferreds are cumulative.

- ▶ Lower per share cost, which even small investors can afford.
- ▶ Call protection for the first five to ten years of issuance.
- ▶ Active - both listed and OTC - and fairly liquid.

Disadvantages include:

- ▶ Their vulnerability to interest rates and price level changes.
- ▶ They have restricted capital gains except for convertible preferreds.

Note: Convertible preferreds allow the holder to exchange your preferred shares for a fixed number of common shares.

Table 6.2 presents major features of preferred stock.

Table 6.2: Characteristics of preferred stock

Voting rights	No unless dividend not paid
Income	Fixed as long as dividend paid
Capital gain/loss potential	Only if interest rates change or company's preferred stock rating changes
Inflation hedge	No, except for adjustable
Preemptive right	No
Priority of claim	Prior to common stock
Unit of purchase	Usually 100 shares

How is preferred stock rated?

Like bond ratings, Standard & Poor's and Moody's rate the quality of preferred stocks. S&P has basically a similar rating scheme as bonds, but triple A ratings are not assigned to preferred stocks. Moody's scheme is somewhat different (see Table 6.3), these ratings are based on the financial soundness of the issuing company and its ability to meet its payment obligations in a timely manner. Preferred stockholders come after bondholders in the event of bankruptcy.

Table 6.3: Description of preferred stock ratings

STANDARD & POOR'S	QUALITY INDICATION
*	Highest quality
AA	High quality
A	Upper medium grade

STANDARD & POOR'S	QUALITY INDICATION
BBB	Medium grade
BB	Contains speculative elements
B	Outright speculative
CCC & CC	Default definitely possible
C	Default, only partial recovery likely
D	Default, little recovery likely

* Triple A rating is not given.

MOODY'S	QUALITY INDICATION
aaa	Top quality
aa	High grade
a	Upper medium grade
baa	Lower medium grade
ba	Speculative type
b	Little assurance of future dividends
caa	Likely to be already in arrears

How do you calculate expected return from preferred stock?

Return on preferred stock is computed as that of bonds. The calculations depend upon whether the preferred stock is issued in perpetuity or if it has a call that is likely to be exercised.

A perpetuity

Since preferred stock usually has no maturity date when the company must redeem it, you cannot calculate a yield to maturity. You can calculate a current yield as follows:

$$\text{Current yield} = D/P$$

where D= annual dividend, and P= the market price of the preferred stock.

Example 6

A preferred stock paying \$2.00 per annum in dividends with a market price of \$20 would have a current yield of 10% (\$2/\$20).

Yield to call

If a call is likely, a more appropriate return measure is yield to call (YTC). Theoretically, YTC is the rate that equates the present value of the future dividends and the call price with the current market price of the preferred stock. An example is given below.

Example 7

Consider the following two preferreds:

PREFERREDS	MARKET PRICE	CALL PRICE	DIVIDENDS	TERM TO CALL	YTC
A	\$8/share	\$9	\$1/year	3 years	16.06%
B	10	9	\$1	3	6.89

Comparison to bond yields

The example shows that yields on straight preferreds are closely correlated to bond yields, since both are fixed income securities. However, yields on preferreds are often below bond yields, which seems unusual because preferreds have a position junior to bonds. The reason is that corporate investors favor preferreds over bonds because of a dividend exclusion allowed in determining corporate taxable income.

What are the types of preferred stock?

There are many types of preferred stock. They are:

Perpetual preferreds. The most common type of preferred stock. Its dividend can be either fixed or floating and is paid quarterly. It has no maturity date. Most issues, however, are callable at the option of the issuer after a specified period of time. Perpetual preferreds typically offer the highest current yields.

Convertible Preferreds. Convertible into common shares and thus offering growth potential plus fixed income; tends to behave differently in the marketplace than straight preferred. The market price of a convertible preferred should equal the common stock price times the conversion rate.

Cumulative Preferreds. Any dividend due that is not declared accumulates and must be paid before any common stock dividend can be declared. Most preferreds are cumulative.

Non-cumulative Preferreds. Left over from the heyday of the railroads and are rare today. Dividends, if unpaid, do not accumulate.

Participating Preferreds. Usually and typically issued by firms desperate for capital. Preferred shareholders share in profits with common holders by way of extra dividends declared after regular dividends are paid. This type may have voting rights.

Prior Preferred Stock (or Preference Shares). This type has a priority claim on assets and earnings over other preferred shares.

Callable Preferreds. This type carries a provision that permits the company to call in the issue and pay it off at full value, plus a premium of perhaps 5%.

Adjustable-rate Preferreds (ARPs). Also called floating or variable-rate preferreds, these are perpetual preferreds with a floating dividend rate that resets each quarter. The rate is determined by using the highest of the three benchmark rates: the 3-month T-bill, 10-year T-note, and 20- or 30-year T-bond. Thus, you are assured of a favorable dividend regardless of the shape of the yield curve.

Foreign Bank Preferreds, American depository receipt (ADR). Shares issued by foreign banks. They are SEC-registered, U.S.-dollar-denominated perpetual preferreds. They offer the following advantages:

- ▶ Higher fixed dividend rates than domestic preferreds.
- ▶ A special tax advantage on a portion of the dividend income in the form of a 15% to 25% tax credit. This means a higher after-tax yield than many comparable tax exempt municipal bonds. *Note:* Tax-deferred retirement accounts such as IRAs do not qualify.
- ▶ Opportunity to diversify globally without foreign currency exposure.

What about investing in money market preferred stock?

Money market preferred stock (MMPS), also known as auction-rate preferred stock, is the newest and most popular member of the preferred stock group attractive to many investors since it offers the following advantages:

- ▶ Low market risk in the event of price decline
- ▶ Competitive yield
- ▶ Liquidity

MMPS pays dividends and adjusts rates up or down, depending on the current market, every seven weeks. Unlike other adjustable-rate preferreds, the market, not the issuer, sets the rate at the auction. If no bids are placed for a stock, MMPS' dividend rate is automatically set at the 60-day AA commercial paper rate quoted by the Federal Reserve Bank. There is a possibility, however, of a failed auction if no buyers show up at

the auction. You must take into account the credit quality of a money market preferred stock. Money market preferreds include:

- ▶ Short-Term Auction-Rate Stock (STARS)
- ▶ Dutch-Auction-Rate Transferable Securities (DARTS)
- ▶ Market-Auction Preferred Stock (MAPS)
- ▶ Auction-Market Preferred Stock (AMPS)
- ▶ Cumulative Auction-Market Preferred Stock (CAMPS)

Note: If you are looking to supplement your monthly cash flow, you may do so with a diversified portfolio of preferred stocks discussed above.



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How Much Are You Willing to Pay for a Common Stock?

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The purpose of valuing a stock is to determine if the market price makes sense considering expected future earnings and dividends. Is the stock appropriately valued?

A number of approaches exist to determine a fundamental value for a security investment. They are, among others, time value, multiplier of earnings, and dividend-oriented. Time value is a basic cornerstone for stock valuation.

What is the value of money?

A dollar is worth more today than tomorrow because you earn interest on the money. A time value problem can be viewed in one of two ways: future value and present value. *Future value* computations, which involve compounding, are necessary to appraise the future value of an investment. *Present value* computations, which involve discounting, are used to determine the present worth of expected future cash flows from an investment. Each is discussed below.

Future value of \$1

Compound interest means interest is received on interest. Future value of a single receipt shows the value of an investment in the future (see Table 7.1). Multiply the beginning amount invested by the Table 7.1 value for the appropriate number of years and interest rate.

Example 1

What is the future value in 12 years of \$5,000 invested today at 10%?

Multiply the beginning amount invested by the Table 7.1 value for the appropriate number of years and interest rate.

$$\$5,000 \times 3.139 = \$15,695$$

Future value of an annuity of \$1

An annuity is equal cash flows received per period such as receiving constant dividends for a stock or interest payments from a bond. Compounding is involved because the payments earn interest (see Table 7.2). Multiply the amount of an annuity invested by the Table 7.2 value for the appropriate number of years and interest rate.

Example 2

What is the future value of \$5,000 invested today at 10% *annually* after 12 years?

$$\$5,000 \times 21.385 = \$106,925$$

Present value of \$1

Present value determines the worth today of unequal future cash flows from an investment (see Table 7.3). Multiply the beginning amount invested by the Table 7.3 value for the appropriate number of years and interest rate.

Example 3

You have an opportunity to receive \$50,000 five years from now. You earn 12% on your investment. What is the most you would be willing to pay for this investment?

$$\$50,000 \times .567 = \$28,350$$

Present value of an annuity of \$1

This determines the worth today of receiving equal annual future cash flows from an investment. Multiply the amount of the annuity to be received by the Table 7.4 value for the appropriate number of years and interest rate.

Example 4

You will receive \$5,000 a year for 10 years at 10%. What is the present worth?

$$\$5,000 \times 6.145 = \$30,725$$

Table 7.1 - Future value of \$1

Periods	4%	6%	8%	10%	12%	14%	20%
1	1.040	1.060	1.080	1.100	1.120	1.140	1.200
2	1.082	1.124	1.166	1.210	1.254	1.300	1.440
3	1.125	1.191	1.260	1.331	1.405	1.482	1.728
4	1.170	1.263	1.361	1.464	1.574	1.689	2.074
5	1.217	1.338	1.469	1.611	1.762	1.925	2.488
6	1.265	1.419	1.587	1.772	1.974	2.195	2.986
7	1.316	1.504	1.714	1.949	2.211	2.502	3.583
8	1.369	1.594	1.851	2.144	2.476	2.853	4.300
9	1.423	1.690	1.999	2.359	2.773	3.252	5.160
10	1.480	1.791	2.159	2.594	3.106	3.707	6.192
11	1.540	1.898	2.332	2.853	3.479	4.226	7.430
12	1.601	2.012	2.518	3.139	3.896	4.818	8.916
13	1.665	2.133	2.720	3.452	4.364	5.492	10.699
14	1.732	2.261	2.937	3.798	4.887	6.261	12.839
15	1.801	2.397	3.172	4.177	5.474	7.138	15.407
16	1.873	2.540	3.426	4.595	6.130	8.137	18.488
17	1.948	2.693	3.700	5.055	6.866	9.277	22.186
18	2.026	2.854	3.996	5.560	7.690	10.575	26.623
19	2.107	3.026	4.316	6.116	8.613	12.056	31.948
20	2.191	3.207	4.661	5.728	9.646	13.743	38.338
30	3.243	5.744	10.063	17.450	29.960	50.950	237.380
40	4.801	10.286	21.725	45.260	93.051	188.880	1469.800

Table 7.2 - Future value of an annuity of \$1

Periods	4%	6%	8%	10%	12%	14%	20%
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	2.040	2.060	2.080	2.100	2.120	2.140	2.200
3	3.122	3.184	3.246	3.310	3.374	3.440	3.640
4	4.247	4.375	4.506	4.641	4.779	4.921	5.368
5	5.416	5.637	5.867	6.105	6.353	6.610	7.442
6	6.633	6.975	7.336	7.716	8.115	8.536	9.930
7	7.898	8.394	8.923	9.487	10.089	10.730	12.916
8	9.214	9.898	10.637	11.436	12.300	13.233	16.499
9	10.583	11.491	12.488	13.580	14.776	16.085	20.799
10	12.006	13.181	14.487	15.938	17.549	19.337	25.959
11	13.486	14.972	16.646	18.531	20.655	23.045	32.150
12	15.026	16.870	18.977	21.385	24.133	37.271	39.580
13	16.627	18.882	21.495	24.523	28.029	32.089	48.497
14	18.292	21.015	24.215	27.976	32.393	37.581	59.196
15	20.024	23.276	27.152	31.773	37.280	43.842	72.035
16	21.825	25.673	30.324	35.950	42.753	50.980	87.442
17	23.698	28.213	33.750	40.546	48.884	59.118	105.930
18	25.645	30.906	37.450	45.600	55.750	68.394	128.120
19	27.671	33.760	41.446	51.160	63.440	78.969	154.740
20	29.778	36.778	45.762	57.276	75.052	91.025	186.690
30	56.085	79.058	113.283	164.496	241.330	356.790	1181.900
40	95.026	154.762	259.057	442.597	767.090	1342.000	7343.900

*Payments (or receipts) at the *end* of each period.

HOW MUCH ARE YOU WILLING TO PAY FOR A COMMON STOCK?

Table 7.3 - Present value of \$1

PERIODS	3%	4%	5%	6%	7%	8%	10%	12%	14%	16%	18%	20%	22%	24%	25%	26%	28%	30%	40%
1	.9709	.9615	.9524	.9434	.9346	.9259	.9091	.8929	.8772	.8621	.8475	.8333	.8197	.8065	.8000	.7937	.7813	.7692	.7143
2	.9426	.9246	.9070	.8900	.8734	.8573	.8264	.7972	.7695	.7432	.7182	.6944	.6719	.6504	.6400	.6299	.6104	.5917	.5102
3	.9151	.8890	.8638	.8396	.8163	.7938	.7513	.7118	.6750	.6407	.6086	.5787	.5507	.5245	.5120	.4999	.4768	.4552	.3844
4	.8885	.8548	.8227	.7921	.7629	.7350	.6830	.6355	.5921	.5523	.5158	.4823	.4514	.4230	.4096	.3968	.3725	.3501	.2603
5	.8626	.8219	.7835	.7473	.7130	.6806	.6209	.5674	.5194	.4761	.4371	.4019	.3700	.3411	.3277	.3149	.2910	.2693	.1859
6	.8375	.7903	.7462	.7050	.6663	.6302	.5645	.5066	.4556	.4104	.3704	.3349	.3033	.2751	.2621	.2499	.2274	.2072	.1328
7	.8131	.7599	.7107	.6651	.6227	.5835	.5132	.4523	.3996	.3538	.3139	.2791	.2486	.2218	.2097	.1983	.1776	.1594	.0949
8	.7894	.7307	.6768	.6274	.5820	.5403	.4665	.4039	.3506	.3050	.2660	.2326	.2038	.1789	.1678	.1574	.1388	.1226	.0678
9	.7664	.7026	.6446	.5919	.5439	.5002	.4241	.3606	.3075	.2630	.2255	.1938	.1670	.1443	.1342	.1249	.1084	.0943	.0484
10	.7441	.6756	.6139	.5584	.5083	.4632	.3855	.3220	.2697	.2267	.1911	.1615	.1369	.1164	.1074	.0992	.0847	.0725	.0346
11	.7224	.6496	.5847	.5268	.4751	.4289	.3505	.2875	.2366	.1954	.1619	.1346	.1122	.0938	.0859	.0787	.0662	.0558	.0247
12	.7014	.6246	.5568	.4970	.4440	.3971	.3186	.2567	.2076	.1685	.1372	.1122	.0920	.0757	.0687	.0625	.0517	.0429	.0176
13	.6810	.6006	.5303	.4688	.4150	.3677	.2897	.2292	.1821	.1452	.1163	.0935	.0754	.0610	.0550	.0496	.0404	.0330	.0126
14	.6611	.5775	.5051	.4423	.3878	.3405	.2633	.2046	.1597	.1252	.0985	.0779	.0618	.0492	.0440	.0393	.0316	.0254	.0090
15	.6419	.5553	.4810	.4173	.3624	.3152	.2394	.1827	.1401	.1079	.0835	.0649	.0507	.0397	.0352	.0312	.0247	.0195	.0064
16	.6232	.5339	.4581	.3936	.3387	.2919	.2176	.1631	.1229	.0930	.0708	.0541	.0415	.0320	.0281	.0248	.0193	.0150	.0046
17	.6050	.5134	.4363	.3714	.3166	.2703	.1978	.1456	.1078	.0802	.0600	.0451	.0340	.0258	.0225	.0197	.0150	.0116	.0033
18	.5874	.4936	.4155	.3503	.2959	.2502	.1799	.1300	.0946	.0691	.0508	.0376	.0279	.0208	.0180	.0156	.0118	.0089	.0023
19	.5703	.4746	.3957	.3305	.2765	.2317	.1635	.1161	.0829	.0596	.0431	.0313	.0229	.0168	.0144	.0124	.0092	.0068	.0017
20	.5537	.4564	.3769	.3118	.2584	.2145	.1486	.1037	.0728	.0514	.0365	.0261	.0187	.0135	.0115	.0098	.0072	.0053	.0012
21	.5375	.4388	.3589	.2942	.2415	.1987	.1351	.0926	.0638	.0443	.0309	.0217	.0154	.0109	.0092	.0078	.0056	.0040	.0009
22	.5219	.4220	.3418	.2775	.2257	.1839	.1228	.0826	.0560	.0382	.0262	.0181	.0126	.0088	.0074	.0062	.0044	.0031	.0006
23	.5067	.4057	.3256	.2618	.2109	.1703	.1117	.0738	.0491	.0329	.0222	.0151	.0103	.0071	.0059	.0049	.0034	.0024	.0004
24	.4919	.3901	.3101	.2470	.1971	.1577	.1015	.0659	.0431	.0284	.0188	.0126	.0085	.0057	.0047	.0039	.0027	.0018	.0003
25	.4776	.3751	.2953	.2330	.1842	.1460	.0923	.0588	.0378	.0245	.0160	.0105	.0069	.0046	.0038	.0031	.0021	.0014	.0002
26	.4637	.3607	.2812	.2198	.1722	.1352	.0839	.0525	.0331	.0211	.0135	.0087	.0057	.0037	.0030	.0025	.0016	.0011	.0002
27	.4502	.3468	.2678	.2074	.1609	.1252	.0763	.0469	.0291	.0182	.0115	.0073	.0047	.0030	.0024	.0019	.0013	.0008	.0001
28	.4371	.3335	.2551	.1956	.1504	.1159	.0693	.0419	.0255	.0157	.0097	.0061	.0038	.0024	.0019	.0015	.0010	.0006	.0001
29	.4243	.3207	.2429	.1846	.1406	.1073	.0630	.0374	.0224	.0135	.0082	.0051	.0031	.0020	.0015	.0012	.0008	.0005	.0001
30	.4120	.3083	.2314	.1741	.1314	.0994	.0573	.0334	.0196	.0116	.0070	.0042	.0026	.0016	.0012	.0010	.0006	.0004	.0000
40	.3066	.2083	.1420	.0972	.0668	.0460	.0221	.0107	.0053	.0026	.0013	.0007	.0004	.0002	.0001	.0001	.0001	.0001	.0000

Table 7.4 - Present value of an annuity of \$1

Periods	3%	4%	5%	6%	7%	8%	10%	12%	14%	16%	18%	20%	22%	24%
1	.9709	.9615	.9524	.9434	.9346	.9259	.9091	.8929	.8772	.8621	.8475	.8333	.8197	.8065
2	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7355	1.6901	1.6467	1.6052	1.5656	1.5278	1.4915	1.4568
3	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.4869	2.4018	2.3216	2.2459	2.1743	2.1065	2.0422	1.9813
4	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.1699	3.0373	2.9137	2.7982	2.6901	2.5887	2.4936	2.4043
5	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.7908	3.6048	3.4331	3.2743	3.1272	2.9906	2.8636	2.7454
6	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.3553	4.1114	3.8887	3.6847	3.4976	3.3255	3.1669	3.0205
7	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	4.8684	4.5638	4.2883	4.0386	3.8115	3.6046	3.4155	3.2423
8	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.3349	4.9676	4.6389	4.3436	4.0776	3.8372	3.6193	3.4212
9	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.7590	5.3282	4.9464	4.6065	4.3030	4.0310	3.7863	3.5655
10	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.1446	5.6502	5.2161	4.8332	4.4941	4.1925	3.9232	3.6819
11	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.4951	5.9377	5.4527	5.0286	4.6560	4.3271	4.0354	3.7757
12	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	6.8137	6.1944	5.6603	5.1971	4.7932	4.4392	4.1274	3.8514
13	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.1034	6.4235	5.8424	5.3423	4.9095	4.5327	4.2028	3.9124
14	11.2961	10.5631	9.8986	9.2950	8.7455	8.2442	7.3667	6.6282	6.0021	5.4675	5.0081	4.6106	4.2646	3.9616
15	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	7.6061	6.8109	6.1422	5.5755	5.0916	4.6755	4.3152	4.0013
16	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	7.8237	6.9740	6.2651	5.6685	5.1624	4.7296	4.3567	4.0333
17	13.1661	12.1657	11.2741	10.4773	9.7632	9.1216	8.0216	7.1196	6.3729	5.7487	5.2223	4.7746	4.3908	4.0591
18	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.2014	7.2497	6.4674	5.8178	5.2732	4.8122	4.4187	4.0799
19	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.3649	7.3658	6.5504	5.8775	5.3162	4.8435	4.4415	4.0967
20	14.8775	13.5903	12.4622	11.4699	10.5940	9.8181	8.5136	7.4694	6.6231	5.9288	5.3527	4.8696	4.4603	4.1103
21	15.4150	14.0292	12.8212	11.7641	10.8355	10.0168	8.6487	7.5620	6.6870	5.9731	5.3837	4.8913	4.4756	4.1212
22	15.9369	14.4511	13.1630	12.0416	11.0612	10.2007	8.7715	7.6446	6.7429	6.0113	5.4099	4.9094	4.4882	4.1300
23	16.4436	14.8568	13.4886	12.3034	11.2722	10.3711	8.8832	7.7184	6.7921	6.0442	5.4321	4.9245	4.4985	4.1371
24	16.9355	15.2470	13.7986	12.5504	11.4693	10.5288	8.9847	7.7843	6.8351	6.0726	5.4509	4.9371	4.5070	4.1428
25	17.4131	15.6221	14.0939	12.7834	11.6536	10.6748	9.0770	7.8431	6.8729	6.0971	5.4669	4.9476	4.5139	4.1474
26	17.8768	15.9828	14.3752	13.0032	11.8258	10.8100	9.1609	7.8957	6.9061	6.1182	5.4804	4.9563	4.5196	4.1511
27	18.3270	16.3296	14.6430	13.2105	11.9867	10.9352	9.2372	7.9426	6.9352	6.1364	5.4919	4.9636	4.5243	4.1542
28	18.7641	16.6631	14.8981	13.4062	12.1371	11.0511	9.3066	7.9844	6.9607	6.1520	5.5016	4.9697	4.5281	4.1566
29	19.1885	16.9837	15.1411	13.5907	12.2777	11.1584	9.3696	8.0218	6.9830	6.1656	5.5098	4.9747	4.5312	4.1585
30	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	9.4269	8.0552	7.0027	6.1772	5.5168	4.9789	4.5338	4.1601
40	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	9.7791	8.2438	7.1050	6.2335	5.5482	4.9966	4.5439	4.1659

What is the fundamental value of common stock?

A stock's value equals the present value of a security's expected cash flows, using your desired rate of return as the discount rate. The calculation follows.

Value of common stock = Present value of future dividends + Present value of selling price

For example, for an investor holding a common stock for only 1 year, the value of the stock would be the present value of both the expected cash dividend to be received in 1 year (D_1) and the expected market price per share of the stock at year-end (P_1). If r represents an investor's required rate of return, the value of common stock (P_0) would be:

$$P_0 = \frac{D_1}{(1+r)} + \frac{P_1}{(1+r)^1} = (D_1 \times \text{Table 7.3 Value}) + (P_1 \times \text{Table 7.3 Value})$$

Example 5

You are thinking about buying stock A at the beginning of the year. The year-end dividend is expected to be \$1.50, and the market price by the end of the year is expected to be \$40. If the investor's required rate of return is 10%, the value of the stock would be:

$$\begin{aligned} P_0 &= \frac{D_1}{(1+r)^1} + \frac{P_1}{(1+r)^1} = \frac{\$1.50}{(1+0.10)} + \frac{\$40}{(1+0.10)} \\ &= (D_1 \times \text{Table 7.3 Value}) + (P_1 \times \text{Table 7.3 Value}) \\ &= \$1.50(.909) + \$40(.909) \\ &= \$1.36 + \$36.36 = \$37.72 \end{aligned}$$

Since common stock has no maturity date and is held for many years, a more general, multiperiod model is needed. The general common stock valuation model is defined as follows:

$$P_0 = \sum_{t=1}^n \frac{D_t}{(1+r)^t}$$

where D_t = dividend in period t .

Three cases of growth in dividends are explained below. They are:

(a) zero growth, (b) constant growth, and (c) modified constant growth. We will explain each of these cases.

(a) Zero Growth Case

In the case of zero growth (i.e., $D_0 = D_1 = \dots =$), then the valuation model reduces to the formula:

$$P_0 = \frac{D}{r}$$

This is the case with a perpetuity. This model is most applicable to the valuation of preferred stocks, or the common stocks of very mature companies such as large utilities.

Example 6

Assuming dividends (D) equals \$2.50 and r equals 10 percent, then the value of the stock is:

$$P_0 = \frac{\$2.50}{0.1} = \$25$$

(b) Constant growth case

In the case of constant growth, if we assume that dividends grow at a constant rate of g every year [i.e., $D_t = D_0(1 + g)^t$], then the general model is simplified to:

$$P_0 = \frac{D_1}{r - g}$$

D_1 = Expected next annual dividend

g = Expected long-term growth rate of the dividend (and earnings, assuming the dividend payout is as constant as the growth rate)

r = Total return required on the stock considering the risk of the future earnings and dividend stream; includes dividend yield and the growth in stock price. r must be greater than g.

Written out,

$$\text{Common Stock Value} = \frac{\text{Dividend in Year 1}}{(\text{Required Rate of Return}) - (\text{Growth Rate})}$$

This formula is known as the *Gordon's dividend valuation model*. This model is most applicable to the valuation of the common stocks of very large or broadly diversified firms and best suited for those companies that are at the expansion or maturity stage of their life cycle.

Note: Solving the model for r results in the formula for the cost of common stock:

$$r = \frac{D_1}{P_0} + g$$

Example 7

The common stock of the HY Corporation is currently selling at \$50 per share. The leadership of the company intends to pay a \$5 per share dividend next year. With the expectation that the dividend will grow at 5% perpetually, what will the market's required return on investment be for HY common stock?

$$r = \frac{D_1}{P_0} + g$$

$$= \frac{\$5}{\$50} + 5\% = 10\% + 5\% = 15\%$$

Example 8

Consider a common stock that paid a \$.78 dividend per share at the end of the last year and is expected to pay a cash dividend every year at a growth rate of 15 percent. Assume the investor's required rate of return is 16.5 percent. The value of the stock would be:

$$D_1 = D_0(1 + g) = \$.78(1 + 0.15) = \$.90$$

$$P_0 = \frac{D_1}{r - g} = \frac{\$.90}{0.165 - 0.150} = \$60$$

(c) Modified constant growth case

We modify the constant growth case as follows:

$$P_0 = E_1 \times \frac{D_1/E_1}{r - g}$$

where E_1 = Expected next earnings per share

D/E = Dividend payout ratio, the percentage of earnings per share paid out in dividends

Note: By rearranging the equation, you arrive at $(D/E) \div (r - g) = P/E$, which is the price-earnings (P/E) ratio.

Example 9

In Example 6, assume further that $E_0 = \$2.00$ and $D/P = 1.5\% = 0.015$. Then, $E_1 = E_0(1 + g) = \$2.00(1 + 0.15) = \2.30

$$P_0 = E_1 \times \frac{D_1/E_1}{r - g} = \$2.30 \times \frac{\$.90/\$2.30}{0.165 - 0.15} = \$2.30 \times 26.1 = \$60$$

Note: Neither model would work if the long-term expected dividend yield was zero and, consequently, the dividend payout ratio was zero. Dividend valuation would be impossible and price-earnings ratio would have to be estimated by other means.

How do you determine the required rate of return?

There are several ways to determine an investor's required rate of return (r) used in the Gordon's model. One is to use the beta-based model discussed in Chapter 4.

$$r_j = r_f + b (r_m - r_f)$$

where r_j = a security's required return, r_f = risk-free rate, and r_m = market return.

Thus:

$$\text{Required return} = \text{risk-free rate} + \text{beta} (\text{market return} - \text{risk-free rate})$$

Example 10

Coca Cola's beta is 1.1. Assume that the risk-free rate (for example, return on a T-bill) = 5.5% and market return (for example, return on the S & P 500) = 10%. Then the return on Coca Cola stock required by investors would be

$$\begin{aligned} \text{Expected (required) return} &= 5.5\% + 1.1 (10\% - 5.5\%) \\ &= 5.5\% + 4.95\% \\ &= 10.45\% \end{aligned}$$

Another approach is to add the stock's dividend yield and growth rate in dividends together:

Example 11

Using the data in Example 8, $r = 15\% + 1.5\% = 16.5\%$

What are some price/earnings ratio approaches?

A more popular pragmatic approach to valuing a common stock is to use the P/E ratio (or multiple). You may use the simple formula:

$$\text{Expected stock price} = \text{a selected P/E ratio} \times \text{projected EPS } (E_1)$$

Comparing the current price against the computed expected value price could help indicate if the stock is under- or overvalued.

Example 12

The XYZ Corporation had EPS of \$5. The EPS is expected to grow at 20 percent. The company's normal P/E ratio is estimated to be 7, which is used as the multiplier. Estimated EPS = \$5 (1 + .20) = \$6.00. The value of the stock is:

$$7 \times \$6.00 = \$42$$

It is important to realize that for the P/E method to be effective in forecasting the future value of a stock, (a) earnings need to be correctly projected and (b) the appropriate P/E multiple must be applied. Forecasting EPS is not an easy task. Furthermore, there is no

agreed-upon method of picking a meaningful P/E ratio. Some analysts use an average of historical earnings; some normalize earnings; some come up with a P/E ratio relative to the market's P/E ratio; and so on. We will discuss various ways below.

1. The first approach is simply to look at historical P/E ratios. A 5- or 10-year average price-earnings ratio is a useful benchmark because it will smooth out fluctuating earnings and prices during both economic expansions and recessions. Table 7.5 illustrates this approach. It shows the calculated high, low, and average P/E ratios of each of the last 5 years. You can estimate a range of stock values by using these five-year average high, low, average P/Es with an earnings estimate.

Table 7.5: Normalized price-earnings ratio example

STOCK PRICE (\$)						
	1997	1998	1999	2000	2001	2002
High	24.50	40.90	45.40	45.00	51.30	_____
Low	16.30	21.30	35.60	37.50	38.90	_____
EARNINGS PER SHARE (\$)						
	1997	1998	1999	2000	2001	2002
_____		1.22	1.43	1.68	2.00*	2.30*
NORMALIZED PRICE-EARNINGS RATIO (STOCK PRICE NEXT YEAR'S EARNINGS PER SHARE)						
	1997	1998	1999	2000	2001	2002
High	20.1	28.6	27.0	22.5	22.3	_____
Low	13.4	14.9	21.2	18.8	16.9	_____
AVERAGE RELATIVE PRICE-EARNINGS RATIOS:						
24.1 = Five-year high						
17.0 = Five-year low						
20.6 = Five-year average						
STOCK VALUATION						
High $\$2.30 \times 24.1 = \55.4						
Low $\$2.30 \times 17.0 = \39.1						
Average $\$2.30 \times 20.6 = \47.4						

* Value line estimated earnings.

This approach, however, does not take into account market factors, and we should adjust for them.

2. The second approach gets around this problem by looking at market-relative P/E ratios. The relative price-earnings ratio examines the relative relationship of the price-earnings ratio of a stock to the price-earnings ratio of the overall market or the stock's industry. It simply compares them with the overall market's price-earnings ratio by dividing a company's price-earnings ratio by the market's (S&P 500 or Value Line Index), as shown below. *Note:* A relative price-earnings ratio of 1.0 would indicate a price-earnings ratio that is equal to the market's. A relative price-earnings ratio above 1.0 would indicate that a company's price-earnings ratio is above the market's. By tracking the price-earnings relative over a number of years, you can estimate a price-earnings relative that a stock tends to follow.

$$\text{Relative P/E ratio} = \frac{\text{Company P/E}}{\text{Market P/E}}$$

$$\text{Company P/E} = \text{relative P/E ratio} \times \text{current market P/E}$$

Table 7.6 illustrates this approach.

Table 7.6: Relative price-earnings ratio example

In this example, the relative ratio is based upon the most recent 12 months of earnings divided by the year-end market price-earnings ratio.

TRAILING PRICE-EARNINGS RATIO

(STOCK PRICE EARNINGS PER SHARE)

	1997	1998	1999	2000	2001	2002
High	24.0	33.5	31.7	26.8	25.7	_____
Low	16.0	17.5	24.9	22.3	19.5	_____

S&P TRAILING PRICE-EARNINGS RATIO

(STOCK PRICE EARNINGS PER SHARE)

	1997	1998	1999	2000	2001	2002
High	17.3	26.1	21.1	21.5	17.6	_____
Low	13.9	19.5	18.0	19.6	16.1	_____

RELATIVE PRICE-EARNINGS RATIO

(COMPANY P/E S&P 500 P/E)

	1997	1998	1999	2000	2001	2002
High	1.4	1.3	1.5	1.2	1.5	_____
Low	1.1	0.9	1.4	1.1	1.2	_____

AVERAGE RELATIVE PRICE-EARNINGS RATIOS:

1.4 = Five-year high

1.2 = Five-year low

1.3 = Five-year average

ALSO NOTE:

24.9 = Current price-earnings ratio of market

\$2.30 = Expected next annual earnings per share

PRICE-EARNINGS RATIO, BASED ON A RELATIVE RATIO AND CURRENT MARKET RATIO:

High: $1.4 \times 24.9 = 34.9$

Low: $1.2 \times 24.9 = 30.0$

Average: $1.3 \times 24.9 = 32.4$

STOCK VALUATION:

High: $34.9 \times \$2.30 = \80.3

Low: $30.0 \times \$2.30 = \69.0

Average: $32.4 \times \$2/30 = \74.5

Note: All the computation results are somewhat different from the spreadsheet figures due to rounding.

- The third approach, developed by Graham and Dodd, is another market-adjusted P/E approach. The adjustment is based on (1) a statistical relationship between P/Es and growth, that is $P/E = 8.5 + 2g$ and (2) an interest adjustment, that is $4.4\%/Y$, where Y = corporate AAA bond yield. The adjusted P/E ratio is:

Example 13

Assume:

$E = \$2.30$, expected next annual earnings per share

$g = 15\%$, annual growth in earnings per share

$Y = 8\%$, current AAA corporate bond yield

Price-earnings ratio:

$$\left[8.5 + (2 \times 15\%) \right] \times \frac{4.4\%}{8\%} = 21.2$$

$$\begin{aligned} \text{Expected stock price} &= \text{a P/E ratio} \times \text{projected EPS (E}_t\text{)} \\ &= 21.2 \times \$2.30 = \$48.76 \end{aligned}$$

A caveat about P/E ratios

The virtue of P/E is its seeming simplicity: It's just stock price divided by earnings per share. The trouble is, like any kind of mental shortcut, the P/E ratio can be highly misleading. Understand why a low price-to-earnings ratio may not be a bargain. Someone who wants to sell you a stock can usually manage to, shall we say, massage P/E to fit his agenda. Here are four things you should know about the number.

1. One stock, two P/Es

There are two kinds of P/Es—those based on the past four quarters of earnings and those that rely on a forecast of future earnings. When someone wants to make a stock sound cheap they use projected P/Es. That's because in a growing company, next year's "E" is always bigger—unless, of course, the future doesn't work out as hoped.

2. The wrong forecast

How good are those Wall Street forecasts? Note that 60% of companies report earnings below what analysts expected a year earlier.

3. Apples to apples

Let's say a broker tells you that Wells Fargo is cheap relative to the rest of the stock market. In October 2004, Wells Fargo had a trailing P/E of 15 vs. about 18 for the S&P 500. Here's the problem: Wells Fargo is a bank, and banks nearly always trade at a discount to the overall market. In fact, the average P/E ratio for the diversified banking sector is about 13 right now. That makes Wells Fargo look a lot less like a screaming deal.

4. Is lower always cheaper?

Be careful when using P/E to judge companies in cyclical businesses like autos, steel, paper or mining—anything that peaks and falls sharply in line with economic cycles. As such stocks soar, their P/Es sometimes shrink because their earnings are rising so fast. But those profits are usually bound to fall back just as dramatically. So it may be better to buy cyclicals when P/Es look high.

What other pragmatic approaches exist?

In valuing a stock investment, there are several pragmatic techniques you may employ: price-sales (P/S), price-free cash flow, price-dividends, and price-book (P/B) value ratios.

The price-sales (P/S) ratio

This is an increasingly popular tool for determining underlying stock value. It is computed as:

$$\frac{\text{Market Price per Share}}{\text{Sales per Share}}$$

A P/S of, say, 0.83 means you are paying 83 cents for every dollar of sales. The P/S ratio reflects a company's underlying strength. A company with a low P/S ratio is more attractive while one with a high ratio is less attractive. *Note:* As a rule of thumb, you should avoid stocks with a P/S ratio of 1.5 or more. Further, you should sell a stock when the ratio is between 3 and 6.

You may use the simple formula:

$$\text{Expected price} = \text{projected sales per share} \times \text{average P/S ratio}$$

Example 14

The XYZ corporation projects sales to be \$3.5 per share. The company's 5-year average P/S ratio is 14.4, which is used as the multiplier. The value of the stock is \$51.0 (\$3.5 x 14.4)

The price-free cash flow

Rather than reported earnings, many successful pros focus on free cash flow, or the cash income that a company is left with after paying expenses. If a stock has a low ratio of price to free cash flow, that suggests it is a healthy business that has a lot of money left over for dividends, stock buybacks or other steps to improve a stock's return. This is a measure that should get greater use than it does, because "the value of a business, at the end of the day, is nothing more" than the current value of its future free cash flows. To figure a company's free cash flow, go to the "cash flow statement" in shareholder reports. Take operating cash flows and subtract all capital expenditures, or money reinvested in the business. For companies with a lot of debt or that hold a lot of cash, it is best to also take out interest expense and interest income.

The price-dividends (P/D) ratio

This is another popular tool for determining underlying stock value. It is computed as:

$$\frac{\text{Market Price per Share}}{\text{Dividends per Share}}$$

You may use the simple formula:

$$\text{Expected price} = \text{projected dividends per share} \times \text{average P/D ratio}$$

Example 15

The XYZ corporation projects dividends to be \$0.88 per share. The company's 5-year average P/D ratio is 61.3, which is used as the multiplier. The value of the stock is \$53.94 ($\0.88×61.3)

The price-book (P/B) ratio

Book value (net asset, liquidation value) per share is the amount of corporate assets for each share of common stock. You may benefit by uncovering stock that is selling below book value or whose assets are significantly undervalued. A stock may represent a good value when its market price is below or close to book value because the security is undervalued. Companies with lower ratios of market price to book value have historically earned better returns than those with higher ratios.

$$\frac{\text{Book Price per Share}}{\text{Book Value per Share}}$$

where book value per share = total stockholders' equity/total shares outstanding.

Example 16

You are thinking of investing in a company that has a market price per share of \$40. The book value per share is = \$50. This may be a buying opportunity, since market price (\$40) is well below book value (\$50), or P/B ratio of .8 ($\$40/\50) and an upward movement in prices may occur.

You may use the simple formula:

$$\text{Expected price} = \text{projected book value per share} \times \text{average P/B ratio}$$

Example 17

The XYZ corporation projects sales to be \$5.50 per share. The company's 5-year average P/S ratio is 10.4, which is used as the multiplier. The value of the stock is \$57.20 ($\5.50×10.4)

Note: Various financial services track industries and companies. They offer expectations as to future earnings, sales, dividends, book value and even market prices of stock. For example, reference may be made to Standard and Poor's *Stock Reports* and Value Line's *Investment Survey*. *Institutional Brokers Estimate System (I/B/E/S)* is a database available on CompuServe that provides consensus earnings estimates on over 3,400 publicly traded corporations. *Zack's* performs a similar service and is available through Dow Jones News/Retrieval. These provide a thorough analysis of companies and provide clues as to future expectations and a source of earnings estimates.

What is the bottom line?

Several valuations were presented so far. The key is to decide which valuation model or models is best suited for a company you are interested in. For example, if your company is a mature, dividend-paying stock, such as a public utility, which is generally a low-growth stock, the dividend-based models make sense. If your company is a growth-oriented company, you should use an earnings-based model since the stock's price will be driven by earnings potential rather than dividends. Nonetheless, it is a good idea to perform sensitivity analysis and obtain a range of estimates. Any final decision on your valuation estimates should, however, be based on a better understanding of the company, its management, and its competitive environment.

Stock valuation by PC

Computers are well-suited to fundamental screening, but weak when it comes to assisting in stock valuation. This is because so much of the valuation rests on your personal growth forecasts for the economy, a company's industry, and the company itself. There are, however, a few programs that can assist investors with fundamental stock valuation. There are programs that have compiled a series of valuation models that examine factors such as price-earnings ratios, dividend yields, earnings and sales growth rates and apply models such as the dividend discount or relative price-earnings ratio model. Entering the appropriate historical information along with your projected growth rates will enable these programs to return valuation estimates. These programs are typically spreadsheet templates, such as the one illustrated in the previous section.

Fixed Income Securities

Fixed income securities generally emphasize current fixed income with minimal capital appreciation potential. They are typically marketable with low risk. They do better during low inflation and economic stability. As interest rates drop, the price of fixed income investments increase. Examples of fixed income securities include: corporate bonds, convertible bonds, government bonds, tax-exempt bonds, and short-term debt securities. Bonds have interest rate and default risk.

What is a bond?

A bond is a certificate evidencing a loan by you to a business or to government. You will receive interest and principle repayment for your investment. Advantages of bonds include:

- ▶ Periodic annual interest income.
- ▶ Bonds are safer than stock because bondholders come before common stockholders in profit distribution and in bankruptcy.
- ▶ Disadvantages of bonds include:
 - ▶ Do not share in incremental profits.
 - ▶ No voting rights.

What are the characteristics of bonds?

The terms and features of bonds include:

1. *Indenture*. A legal document of the issuer's duties related to the bond issue. It includes the terms of the bond issue and the restrictive provisions referred to as *restrictive covenants*. An independent trustee is assigned. A restrictive covenant includes maintenance of minimum ratio percentages and working capital amounts.

2. *Trustee.* A third party responsible for insuring the indenture provisions are satisfied.
3. *Maturity date.* The date the last principle payment is due.
4. *Par value.* The face value of a bond is typically \$1,000.
5. *Coupon rate.* The periodic payment coupon rate you will receive. It is based on the interest rate multiplied by face value.
6. *Yield.* Yield differs from the coupon interest rate (see Example 1). It is the effective interest rate you earn on the bond investment. If a bond is purchased below its face value (discount), the yield is higher than the coupon rate. If a bond is bought above face value (premium), the yield is below the coupon rate. Computations of alternative yield measures on a bond are presented later in this chapter.

Example 1

A BOND WITH AN 8% COUPON RATE	ANNUAL INTEREST	YIELD
If you buy it at par - \$1,000	\$80.00	8%
If you buy it at a discount price of \$800	80.00	10%
If you buy it at a premium price of \$1,200	80.00	6 2/3%

7. *Call feature.* Most bonds may be redeemed early by the issuing company, at face or at a premium. An issuer may opt to call a bond early if market interest rates decline. The issuer can issue bonds to replace the old bonds at a lower interest rate. Investors are insulated from calls for a specified time subsequent to the bonds' issuance (many are 6 months or 1 year). If a bond is called, the result is normally a reduced rate of return for the bondholder.
8. *Sinking fund provision.* The issuing company may have to put money aside periodically (e.g., annually) into a "sinking fund". The funds will be used to retire the bonds at maturity or to retire part of the issue each year after a particular date. Such a stipulation may exist to protect investors.

Bond yields, interest rates and bond prices

Keep in mind the daily fact of financial life: bond yields move in the opposite direction of bond prices. Again, a bond's current yield is different from its interest rate (coupon rate). While your rate of return holds steady, the yield (real return) moves up and down as interest rates change. When interest rates rise, the price of your bond goes down since its interest rate becomes less attractive than the high rates of newly issued bonds of similar quality. Since the payments promised by the bond issuer don't change, the market adjusts the yield by raising or lowering the value of the bonds.

What is the yield curve?

The yield curve graphically depicts the relationship between length of time to maturity and yields of bonds. Other factors such as default risk and tax treatment are held constant. It helps you decide whether to buy long- or short-term bonds. Analysts frequently investigate the yield curve carefully in order to make judgments about the direction of interest rates. Remember interest rates is a critical factor in determining a bond's yield and price. A yield curve is simply a graphical presentation of the term structure of interest rates.

What are the types of bonds?

Table 8.1 summarizes the various features of bonds.

Table 8.1: The world of bonds

	MATURITY	DENOMINATION	PRICING	CALL PROVISION
Corporate bonds	20-30 years	\$1,000	% of par	Often callable
Municipal bonds	1 month – 30 yrs.	\$5,000 - \$10,000 (usually \$5,000)	Quoted on yield-to-maturity basis	Often callable
Agency bonds	30 days – 20 yrs.	\$1,000 - \$25,000 and up	Quoted on yield-to-maturity basis	Often callable
Marketable government securities				
Treasury bills	13, 26, or 52 wks	\$10,000 - \$ 1 m in increments of \$5,000	Issued at discount; priced in basis points	No

	MATURITY	DENOMINATION	PRICING	CALL PROVISION
Treasury notes	2 – 10 yrs.	\$1,000 - \$1 m	Issued at par; Priced at % of par	Usually not callable
Treasury bonds	Over 10 yrs.	\$1,000 - \$1 m (usually \$10,000)	Priced at % of par	Usually not callable
Non-marketable government securities				
Series EE	Adjustable	\$50 - \$10,000	Issued at 50% discount	No
Series HH	10 yrs.	\$500 - \$10,000	Issued at par	No

* Government securities are priced in 1/32's of a percentage points, corporate bonds in 1/8ths.

Bonds may be categorized as follows:

1. *Secured bonds.* Specific collateral is pledged to back the bond issue.
 - (a) *Mortgage bonds.* Mortgage bonds are backed by collateralized property which may be sold if the bonds are defaulted on. In case of default, the bondholders may foreclose on the secured property and sell it to satisfy their claims. They take various forms: first mortgage bonds (senior lien bonds) that have claim against the corporation's fixed assets and second mortgage bonds (junior liens), backed by real property, but second in priority.
 - (b) *Collateral trust bonds,* backed by marketable securities deposited with the trustees.
 - (c) *Equipment trust certificates,* issued generally by transportation corporations (railroads or airlines). The trustee holds title to the equipment until the certificate is paid.
2. *Unsecured bonds*
 - (a) *Debentures.* They are backed by the issuing corporation's *good faith and credit.* The issuing company must be financially sound. High credit ratings are essential. Government bonds are examples.
 - (b) *Subordinated debentures,* honored after debentures in the case of liquidation or reorganization (though still before stocks). Junior debentures are sometimes issued by finance companies.

3. *Income bonds.* The bonds pay interest only if there is profit.
4. *Convertible bonds.* These bonds may be converted to common stock at a later date at a specified conversion price. They have features of both bonds and common stock in that they generate constant interest income and capital appreciation through related common stock. Relevant formulas are:

Conversion ratio = Par value of a bond/Conversion price

Parity price of a bond = Common stock price x conversion ratio

Parity price of a stock = Price of the bond/conversion ratio

Example 2

If a \$1,000 par value bond had a conversion price of \$40 this would imply a conversion ratio of 25:1 ($\$1,000/\$40=25$ or $\$40 \times 25 = \$1,000$). If the bond was selling at \$1,150, then the parity price of the stock would be $\$1,150/25 = \46 .

5. *Zero-coupon bonds.* Zeros are purchased at a discount and mature at par. Each year, the portion of the discount that is earned is taken as interest income on the tax return. Tax must be paid on the "earned" portion of the discount every year even though no payment is made by the issuer. Zero coupon bonds involve a lower initial investment. The investors do not receive interest until the bonds mature. The issuer does not have to make annual cash outlays for interest. However, the discount must be amortized annually and reported as interest expense.

Note: Many corporations, municipalities, and Federal agencies such as Fannie Mae and Freddie Mac, issue zero coupon bonds. U.S. Treasury does not sell zero coupons, instead it allows government securities dealers to strip apart coupon bonds and sell them in the form of zeros. Treasury bonds in this form are also called Treasury STRIPs.

6. *Tax-exempt bonds.* Municipal bonds are free of tax on interest. They have a lower interest rate than comparable corporate bonds. The after tax yield is usually higher than an equivalent taxable bond.
7. *U.S. government securities.* These include bills, notes, bonds, and mortgages (e.g., "Ginnie Maes"). Treasury bills are used for near-term government financing and have a maturity of twelve months or less. U.S. Treasury notes mature in one to ten years. Treasury bonds mature in ten to twenty five years. They can be bought in denominations of \$1,000. Interest earned on U.S. government securities is tax free for state and local returns. "Ginnie Maes" are guaranteed pools of 25- to 30-year Federal Housing Administration (FHA) or Veterans Administration (VA) mortgages.
8. *Deep discount bonds.* They are bought at a substantial discount from face value. The bonds may be risky and/or have a long maturity date.

9. *Junk bonds*. They are bonds with low credit ratings (rated at less than investment grade BBB) from Moody's and Standard & Poor's. They are issued by financially unsound companies. They offer high return but have high risk.
10. *Serial bonds*. They are bonds that mature in installments over time rather than at one maturity date. Some serial bonds have balloon maturity where most mature in one year. Investors can choose the maturity that suits their financial needs.
11. *Series bonds*. They are issued over a period but with the same maturity date.

How to select a bond

When selecting a bond, you should take into consideration basically five factors:

1. Quality
2. Maturity
3. Features
4. Taxes
5. Yield

Quality

Quality of a bond is indicated by its bond rating. Such rating reflects risk and considers the interest rate, price, maturity period, and financial health (chances of default). Bond investors tend to place more emphasis on independent analysis of quality than do common stock investors. Bond analysis and evaluation are performed by Standard & Poor's and Moody's. A listing of the classifications of these independent agencies is shown below. For original versions of descriptions, refer to Moody's *Bond Record* and Standard & Poor's *Bond Guide* (see Table 8.2).

Table 8.2: Description of bond ratings

MOODY'S	STANDARD & POOR'S	QUALITY INDICATION
Aaa	AAA	Highest quality
Aa	AA	High quality
A	A	Upper medium grade
Baa	BBB	Medium grade
Ba	BB	Contains speculative elements
B	B	Outright speculative

MOODY'S	STANDARD & POOR'S	QUALITY INDICATION
Caa	CCC & CC	Default definitely possible
Ca	C	Default, only partial recovery likely
C	D	Default, little recovery likely
	R	Risky applied to derivatives.

* Ratings may have + or – signs to indicate relative class standings.

A higher bond rating means a lower yield. Because ratings change over time rating agencies provide “credit watch lists”.

Maturity

Longer maturities means more risk because of greater volatility in price with interest rate changes. Shorter maturities translate to lower yields. A “safe” investor should not choose bonds maturing in more than 10 years.

Features

Is there a call feature allowing the issuing company to buy back its bonds after a specified time if it so selects instead of waiting to maturity? In such a case, you will likely receive a slight premium above par. Bonds are typically called if their interest rates exceed prevailing market rates. Stay away from bonds of companies with call provision involved in “event risk” (e.g., leveraged buyouts).

Is there a conversion feature into stock? A convertible bond allows for periodic interest income and appreciation value of the underlying common stock. Bond (income) mutual funds offer professional management.

Taxes

Do you have a high tax rate? If so, tax-exempt bonds may be suitable. You may buy them directly or through a mutual fund.

Yield

Yield (effective interest rate) depends on bond rating. Yield is discussed later.

Note: A bond may be bought at a discount (below face value) when:

1. There is a long maturity period.

2. It is a risky company.
3. The interest rate on the bond is less than the “current market interest rate.”

A bond may be bought at a premium when the aforementioned circumstances are opposite.

How do you determine interest-rate risk?

Interest-rate risk can be determined in two ways. One way is to look at the term structure of a debt security by measuring its average term to maturity – a duration. The other way is to measure the sensitivity of changes in a debt security’s price associated with changes in its yield to maturity. We will discuss two measurement approaches: Macaulay’s duration coefficient and the interest elasticity.

Macaulay’s duration coefficient

Macaulay’s duration (D) is an attempt to measure risk in a bond by considering the maturity and the time pattern of cash inflows (i.e., interest payments and principal). It is defined as the number of years until a bond pays back its principal. A simple example below illustrates the duration calculations.

Example 3

A bond pays a 7 percent coupon rate annually on its \$1,000 face value if it has 3 years until its maturity and has a YTM of 6 percent. The computation of duration involves the following three steps:

Step 1: Calculate the present value of the bond for each year.

Step 2: Express present values as proportions of the price of the bond.

Step 3: Multiply proportions by years’ digits to obtain the weighted average time.

(1) Year	(2) Cash Flow	(3) PV Factor @ 6%	(Step 1) (4) PV of Cash Flow	(Step 2) (5) PV as Proportion of Bond Price	(Step 3) (6) Column (1) X Column (5)
1	\$70	.9434	\$66.04	.0643	.0643
2	70	.8900	62.30	.0607	.1214
3	1,070	.8396	<u>898.37</u>	<u>.8750</u>	<u>2.6250</u>
			\$1,026.71	1.0000	2.8107

This 3-year bond's duration is a little over 2.8 years. Although duration is expressed in years, think of it as a percentage change. Thus, 2.8 years means this particular bond will gain (lose) 2.8 percent of its value for each 1 percentage drop (rise) in interest rates.

Note:

- (1) In all cases, a bond's duration is less than or equal to its term to maturity. Only a pure discount bond—that is, one with no coupon or sinking-fund payments – has duration equal to the maturity.
- (2) The higher the D value, the greater the interest rate risk, since it implies a longer recovery period.
- (3) Duration will not tell you anything about the credit quality or yield of your bonds, although some bonds (or bond funds) manage to produce top returns without undue risk. For example, Harbor Bond Fund has returned a respectable return -an annualized 11.5 percent over the past five years. Yet its duration is a middle-of-road 5.3 years.

Interest rate elasticity

A bond's interest rate elasticity (E) is defined as

$$E = \frac{\text{Percentage Change in Bond Price}}{\text{Percentage Change in YTM}}$$

Since bond prices and YTM's move inversely, the elasticity will always be a negative number. Any bond's elasticity can be determined directly with the above formula. Knowing the duration coefficient (D), we can calculate the E using the following simple formula:

$$(-1)E = D \frac{\text{YTM}}{(1 + \text{YTM})}$$

Example 4

Using the same data in Example 3, the elasticity is calculated as follows:

$$(-1) E = 2.8107 [.06/(1.06)] = .1591$$

which means that bonds (and bond funds) will lose or gain 15.91% of principal value for each 1 percentage point move in interest rates.

How do you compute the effective interest rate on a bond?

Bonds are appraised using many different kinds of returns such as current yield, yield to maturity, yield to call, and realized yield.

1. *Current yield*. It equals annual interest divided by the current market price of the bond. It is published in *Barron's*.

$$\text{Current Yield} = \frac{\text{Annual Interest Payment}}{\text{Current Price}}$$

Example 5

A 10 percent coupon rate \$1,000 face value bond sells for \$920. Current yield equals $\$100/\$920 = 10.9\%$

This measure of return is deficient because it does not consider the maturity date. A bond having a 2-year maturity and another with a 20-year maturity would have identical current yields assuming interest payments of \$100 and a price of \$920. Obviously the 2-year bond is better because you not only obtain \$100 in interest, but also a capital gain of \$80 (\$1,000 - \$920) with a year time period. You could reinvest the money earned for a return.

2. *Yield to maturity (YTM)*. It considers the maturity date. It is the real return received from interest plus capital gain if the bond is kept to maturity.

$$\text{Yield to Maturity} = \frac{1 + (\$1,000 - V)/n}{(\$1,000 + V)/2}$$

where V= market value of bond

I= dollar interest per annum

n= number of years to maturity

Example 6

You were considering a 5-year, 10 percent coupon, \$1,000 face value bond at a price of \$850.

$$\text{Yield to Maturity} = \frac{\$100 + (\$1,000 - \$850)/5}{(\$1,000 + \$850)/2} = \frac{\$130}{\$925} = 14\%$$

Because the bond is purchased at a discount, the yield (14%) exceeds the coupon rate of 10%.

3. *Yield to call (YTC)*. If the bond may be called before maturity, the yield to maturity formula will have the call price instead of the face value of \$1,000.

Example 7

A 20-year bond was issued at a 13.5 percent nominal interest rate, and after two years, rates have declined. The bond is now selling for \$1,180, the yield to maturity is 11.15 percent, and the bond can be called in five years after issue at \$1,090. Therefore, if you buy the bond two years after issue, your bond may be called back after three more years at \$1,090. The YTC is calculated below:

$$\frac{\$135 + (\$1,090 - \$1,180)/3}{(\$1,090 + \$1,180)/2} = \frac{\$135 + (-\$90/3)}{\$1,135} = \frac{\$105}{\$1,135} = 9.25\%$$

Note: The yield to call figure of 9.25 percent is 190 basis points less than the yield to maturity of 11.15 percent. Obviously, you must be aware of the differential since a lower return is earned.

4. *Realized yield.* You may trade in and out of a bond before it matures. You need a return measure to appraise the attractiveness of any bonds you expect to buy and sell. Realized yield is a variation of yield to maturity. There are two variables changed in the yield to maturity formula. Future price is substituted for face value (\$1,000), and the holding period is substituted for the number of years to maturity.

Example 8

In Example 6, assume you expect to hold the bond for just four years. You estimate interest rates will change in the future so that the price of the bond will move to approximately \$960 from its current amount level of \$850. Therefore, you will purchase the bond today for \$850 and sell it four years later for \$960.

$$\text{Realized Yield} = \frac{\$100 + (\$900 - \$850)/4}{(\$960 + \$850)/2} = \frac{\$128}{\$905} = 14.1\%$$

5. *Tax-equivalent yield.* Yield on a municipal bond may be appraised on an equivalent prior-tax yield basis, because of the tax-free interest. Thus, munis might make the most sense for people whose tax-equivalent yield on a tax-free bond or bond fund would be greater than the yield from a similar taxable alternative. Here are two equations to determine whether tax-exempt yields are right for you.

For tax-equivalent yields:

$$\frac{\text{Tax-free Yield}}{(1 - \text{Tax Rate})} = \text{Tax-equivalent Yield}$$

For combined effective federal/state tax rates (if you're considering buying bonds or funds with bonds issued in your home state):

$$\text{State rate} \times (1 - \text{federal}) = \text{effective state rate}$$

Effective state rate + federal rate = combined effective federal/state tax rate

Example 9

If your marginal *federal* tax rate is 36 percent and your municipal bond investment earns 7 percent interest, the tax-equivalent yield on a taxable investment is:

$$7\% / (1 - .36) = 10.94\%$$

You could select from a taxable investment of 10.94% and a tax-exempt bond of 7 percent and be indifferent between the two.

Refer to Table 8.3 for tax-equivalent yields if free from (a) federal taxes and from (b) combined federal and state taxes in selected states.

Table 8.3: Tax-equivalent yields

TAX-FREE YIELD		YIELD FREE FROM FED. TAX				TAX-EQUIVALENT YIELD IF FREE FROM STATE/FEDERAL TAXES IN THE FOLLOWING STATES*	
		CA	CT	FL	MA	NJ	NY
4.00%	6.25%	7.02	6.54	6.25	7.10	6.72	7.13
5.00	7.81	8.78	8.18	7.81	8.88	8.40	8.91
6.00	9.38	10.53	9.82	9.38	10.65	10.0	10.69
7.00	10.94	12.29	11.45	10.94	12.43	11.76	12.48

* Tax-equivalent yields in the table are based on a federal tax rate of 36%. Based on the combined effective federal, state rate: CA-43.04%; CT-38.88%; FL-36.00%; MA-43.68%; NJ-40.48%; NY-43.89% (includes New York City rate).

What are municipal bonds?

Municipal bonds are issued by state or local governments or by any political subdivision or public agency that is not federal. *Interest income from municipal bonds is exempt from federal tax.* Bonds issued by a state and purchased by residents of that state are exempt from state income taxes. For this reason, munis will pay the lowest rate of interest compared to other taxable bond issues. The minimum investment in munis is \$5,000 principal. Any capital gain realized in the purchase and sale of a municipal bond is subject to capital gain tax (When municipals are issued at a discount, however, the difference between the discount and par is considered interest income).

Munis may be categorized either as *general obligation (G.O.) bonds* or *revenue bonds*.

1. General obligation (G.O.) bonds are backed by the full faith and credit (and by the taxing power) of the issuer. Local governments have the ability to collect property taxes, known as “ad valorem” taxes while most state

governments collect income and sales taxes. In the event of a default, G.O. bondholders have the right to compel a tax levy or legislative appropriation to make payment on the debt.

2. Revenue bonds are backed by revenues from the facilities built with the proceeds of the bond issue. Sewer bonds, stadium bonds, solid waste disposal, or toll bridge bonds would be examples of revenue bonds. Since only the specified revenues back a revenue bond, this is a self-supporting debt. *Note:* Because revenue bonds are backed by a single source of funds, they have greater credit risk than G.O. bonds. Because of this, most revenue bonds are issued under a "Trust Indenture."

How about trading in municipal bonds?

Municipal bonds are *not* traded on national exchanges but in the over-the-counter market. Generally, this confines investor interest in municipal issues to residents of the state of issuance. *Note:* Be sure to ask your broker if he or she has access to any on-line services such as *J.J. Kenney Information Systems*, which provides a comprehensive data basis of most munis outstanding and is necessary for accurate portfolio analysis and the prompt answering of credit questions. Another factor that limits municipal trading is that most issues are "serial" maturities. Within a bond offering are multiple maturities, each having a relatively small principal amount. The small amount of each maturity available limits trading.

What are government bonds?

Government bonds are the most liquid issues traded on any market, are extremely safe, have some tax advantages (returns are not usually subject to state and local taxes), and can be used as loan collateral.

Treasury bills

Treasury bills have a maximum maturity of one year and common maturities of three months (91 days, or 13 weeks), six months (182 days, or 26 weeks), or one year (52 weeks). They trade in minimum units of \$10,000. They do not pay interest in the traditional sense; they are sold at a discount, and redeemed when the maturity date comes around, at face value. T-bills are extremely liquid in that there is an active secondary or resale market for these securities. T-bills have an extremely low risk because they are backed by the U.S. government. Another reason for the popularity of Treasuries is that the interest income they produce is exempt from state and local income taxes.

The price is *quoted in terms of the discount yield*. "March 4, bid 4.30%, asked 4.20%"; offering to buy the bill at 95.70% of par (an offer to pay \$9,570 for the bill since par value of T-bills is usually \$10,000) and offering to sell at 95.80% of par.

The yield on discount securities such as T-bills, called the *discount yield* (d), is calculated using the formula:

$$d = \frac{\$10,000 - P}{P} \times \frac{365}{\text{days-to-maturity}}$$

where P = purchase price. The formula simply states that the yield on the discount security is equal to the gain on the bill relative to its face of \$10,000, $(\$10,000 - P)/\$10,000$, times a factor which annualizes this gain, $365/\text{days-to-maturity}$.

Example 10

Assume that $P = \$9,800$. The T-bill yield is:

$$\frac{\$10,000 - \$9,800}{\$9,800} \times \frac{365}{90} = \frac{\$200}{\$9,800} \times 4.06 = 0.0829 = 8.29\%$$

The so-called *equivalent bond yield* (EBY) allows you to compare the yields on discount securities with other kinds of bonds. It makes discount instruments comparable to bonds. The idea is to compute a yield that reflects the opportunity that bond market investors have to receive and reinvest semiannual coupon payments. The formula is:

$$\text{EBY} = \frac{365 \times d}{360 - (d \times \text{days-to-maturity})}$$

Example 11

For the 90-day instrument used in the previous example, the EBY would be

$$\text{EBY} = \frac{365 \times 0.0829}{360 - (0.0829 \times 90)} = 0.0858 = 8.58\%$$

Auctions for 3- and 6-month T-bills take place weekly and 12-month bills are auctioned monthly.

Treasury notes

Treasury notes have maturities of two to ten years, available either in registered form or without coupons. They are not callable. They are quoted in 1/32's of a percentage point; "Maturing 11/10/90 - Bid: 99.16; Ask: 99.24" means bid at 99 16/32 or \$995; ask at 99 24/32 or \$997.50.

Treasury bonds

Treasury bonds have maturities ranging from ten to thirty years. Some have *optional call dates*, as “Due 6/30 2012/17” where the first date shown is the call date, the second the maturity date. They are quoted like T-notes.

Treasury strips (Separate trading of registered interest and principal of securities)

Also called zero coupon Treasuries, Treasury STRIPS are designated Treasury notes and bonds that can be stripped directly by dealers in order to create zero-coupon securities. The bonds are “stripped” of their coupons and units are sold representing only the repayment of principal at the maturity date. Each of the interest payments on the bonds is grouped into a unit and sold as a separate “zero-coupon” issue. All new Treasury notes and bonds of 10 years or longer are eligible for the STRIP program. Investors are attracted to STRIPS because of their predictability, fixed rate of interest, and maturity at a known value. One chief drawback: Although they do not pay interest until maturity, the IRS requires you to pay taxes on each year’s accrued value as though you had received a check in the mail. *Note:* They typically outperform straight Treasuries by 15 to 50 basis points.

How do you buy treasuries?

You can buy Treasuries for as little as \$1,000 to \$10,000 (depending on the type of security), with no commission cost, through a program called Treasury Direct. Or, you can pay \$50 or \$60 per transaction and buy through a broker. Each of these purchasing methods has its pros and cons.

Treasury securities are sold in a variety of maturities at regularly scheduled auctions. The dates for non-weekly auctions are announced about a week in advance. Table 8.4 below compares Treasuries. To learn the exact dates, call the nearest Federal Reserve Bank. For example, in New York City, the telephone number is (212) 720-6619. You can either speak directly with a service representative or listen to a recording of relevant information. The office will mail you the proper investment forms to fill out and mail back. *Note:* Treasury securities carry the lowest markup, and you can even buy them without commission directly from Federal Reserve branches (for information, go to www.publicdebt.treas.gov). Treasury yields are published daily in the larger newspapers and are available on numerous Web sites.

Table 8.4: U.S. Treasury securities**TREASURY BILLS**

What: 13 – week and 26 – week.

When: Every Monday, except holidays.

How much: \$10,000 minimum, then \$1,000 increments.

What: 52 – week.

When: Every four weeks, generally on a Thursday.

How much: \$10,000 minimum, then \$1,000 increments.

TREASURY NOTES

What: 2 – year.

When: Monthly, generally on a Tuesday late in the month.

How much: \$5,000 minimum, then \$1,000 increments.

What: 3 – year.

When: Quarterly, in early February, May, August, and November.

How much: \$5,000 minimum, then \$1,000 increments.

What: 5 – year.

When: Monthly, generally on a Wednesday late in the month.

How much: \$1,000 minimum, then \$1,000 increments.

What: 10 – year.

When: Quarterly, in early February, May, August, and November.

How much: \$1,000 minimum, then \$1,000 increments.

TREASURY BONDS

What: 30 – year.

When: Twice a year, in February and in August.

How much: \$1,000 minimum, then \$1,000 increments.

ZERO COUPON TREASURIES – TREASURY STRIPS

What: Three months to 30 – year.

When: Quarterly, in early February, May, August, and November.

How much: \$1,000 minimum, then \$1,000 increments.

What are government agency bonds?

The next area of fixed-income bonds is that of government agency bonds. The U.S. Government promotes home ownership through the activities of the Federal Home Loan Banks, the Federal National Mortgage Association (FNMA or “Fannie Mae”), the Government National Mortgage Association (GNMA or “Ginnie Mae”), and the Federal Home Loan Mortgage Corporation (FHLMC or “Freddie Mac”). These agencies make a secondary market in home mortgages. Their function is to add liquidity and safety to

investing in the mortgage market. They purchase the mortgages from the local banks that originated the loans. The agencies obtain the funds to buy the mortgages by selling bonds to the public. The U.S. Government does not directly back these issues with the exception of the Government National Mortgage Association.

The Government National Mortgage Association (GNMA) is described as a mortgage pass-through agency. It buys pools, or groups, of a large number of home mortgages insured by the Veterans Administration and Federal Housing Administration, from conventional lenders, and then reissues new certificates of these mortgage pools to GNMA investors (“*pass through*” certificates). GNMA is offered with a minimum \$25,000 face amount, and \$5,000 increments thereafter. They pay interest and part principal monthly. In this sense, you, as a GNMA investor, are in a similar position to that of a mortgage lender. *Note:* There are many mutual funds available which invest primarily, or exclusively, in GNMA's. GNMA funds enjoy the same advantages as regular mutual funds, diversification and professional management.

Fannie Mae also issues mortgage backed pass-through certificates. But they are not limited to FHA or VA approved loans. FHLMAC, or “Freddie Mac” offers *collateralized mortgage obligations (CMOs)*. Note that Fannie Mae and Freddie Mac are not truly government agencies, but “privatized” companies, whose stocks are listed on the NYSE and are legally owned by the shareholders.

Pass-through certificates have problems because mortgage pools have a long fixed life and mortgage prepayment risk is high. CMOs were developed to eliminate or minimize these risks.

On the basis of expected cash flows to be received over the life of the pool, separate classes of securities called “tranches” are created. For example, a 15-year mortgage pool may be broken up into 5 tranches as follows:

Tranch 1	1 – 3 years
Tranch 2	4 – 6 years
Tranch 3	7 – 9 years
Tranch 4	10 – 12 years
Tranch 5	13 – 15 years

As mortgages are prepaid, the payments are applied to Tranch 1 securities. After Tranch 1 is retired, prepayments then are used to retire Tranch 2 starting in the 4th year, etc. Thus, *prepayment risk is reduced*. Investors can buy a mortgage backed security with a wide range of maturities. Even though prepayment risk is reduced, CMO pricing can be volatile. The most volatile are so-called “zero-Tranch” portions of CMOs, which receive no interest payments until the preceding Tranches are retired.

What are other fixed income securities?

They are very secure debt obligations whose maturities are less than one year, characterized by their short-term, high quality, and marketability. They may be held temporarily and include:

- ▶ *Certificates of deposit (CDs)*. High quality instruments of banks usually from \$2,000 and up. The maturity period is usually 3 months or more. A penalty is assessed for early redemption. However, the penalty on early withdrawal is treated for tax purposes as a deduction of gross income.
- ▶ *Banker's acceptances (BAs)*. A banker's acceptance is a time draft (an order to pay a specified amount to the holder on a specified date), drawn on and "accepted" by a bank. By accepting the draft, a bank assumes the responsibility to make payment at maturity of the draft, thereby making the draft more readily marketable. It is usually used in foreign trade. BAs are bearer securities, and can be held to maturity or can be traded. The maturity is 9 months or less and the security trades at a discount to face value. Only the highest quality BAs are eligible for Fed trading, known as "prime BAs".
- ▶ *Eurodollars*. These are deposit liabilities, denominated in U.S. dollars, of banks located outside the U.S. Since the Eurodollar market is relatively free of regulation, banks in the Eurodollar market can operate on narrower margins or spreads between dollar borrowing and lending rates than banks in the U.S.
- ▶ *Commercial paper*. A short-term financial instrument issued by high quality large companies on an unsecured discount basis. It is typically for \$100,000 or more.
- ▶ *Money market fund*. A safe class of mutual fund type investing in high quality near-term, liquid securities (e.g., Treasury Bills). It is a conservative investment usually stated on a \$1 per share basis.

Table 8.5 ranks various short-term investment vehicles in terms of their default risk.

Table 8.5: Default risk among short-term investment vehicles

Degree Of Risk	Higher ▲	Eurodollar time deposits and CDs
	▼ Lower	Commercial paper (top quality) Bankers' acceptance (BAs) U.S. Treasury repos U.S. government agency obligations U.S. Treasury obligations

How do you Invest in savings bonds?

U.S. Savings Bonds are non-transferable instruments. They can only be redeemed by the purchaser, and can neither be marketed nor used as collateral for loans. There are two types of U.S. savings bonds: Series EE and Series HH.

Series EE is a bond purchased for 50 percent of its face value. It pays no periodic interest, since the interest accumulates between the purchase price and the bond's maturity value. For example, a Series EE bond can be purchased for \$100 and redeemed at maturity for \$200. Series EE bonds can be purchased in denominations from \$50 to \$10,000, with a maximum purchase limit of \$30,000 annually. EE Bonds will earn interest for 30 years from issue date. There is a 3 month penalty for cashing in an EE Bond before it is five years old.

For Series EE bonds issued on or after May 1, 1997, the interest rate is 90 percent of the average of prevailing market yields on 5-year Treasury marketable securities. A new rate is announced each May and November. *Note:* Since yields are adjusted every six months, the bonds offer unique opportunities in times of rising interest rates.

Series HH, also called a *current income bond*, is a bond issued only in exchange for Series E and EE savings bonds. They are purchased at face value and pay interest semiannually until maturity. Early redemption will lose interest as of the end of the interest period preceding the date of redemption. It can be redeemed after six months and has a maturity period of 20 years. Maximum purchase in one year is \$20,000 face value, but they can be purchased only by trading EE Bonds. Interest on HH Series Bonds is taxable in the year in which it is received. Interest is exempt from state and local taxes.

Example 12

George Lee decided to invest \$5,000 in a Series EE savings bond for his retirement. If the interest averages 8% after 10 years, how much will he have after 10 years? (Assume a semiannual interest accrual).

The future value of \$1 for 20 periods at a semiannual rate of 4% , i.e., $T1(2\%, 20$ periods), is 2.191 is \$10,955 ($\$5,000 \times 2.191$).

Some advantages are:

- ▶ The interest earned on them is free from state and local taxes. Federal income taxes can be deferred on Series EE bonds until they are redeemed. It can be deferred even beyond this point by rolling over the EE bonds into Series HH bonds. Parents who sell EE bonds to pay for their children's college tuition don't have to pay federal income taxes on the interest earned, if their income is under a certain amount. The full interest exclusion is only available for married couples filing joint returns with modified adjusted gross incomes

of up to and including \$83,650 and for single filers with modified adjusted gross incomes of up to and including \$55,750 if the bonds are in the parents' names. There are the limits currently in effect in 2001. The taxpayer must be at least 24 years old before the issue date of the bond.

- ▶ There are no service charges when one purchases or redeems savings bonds, as there are with many other investments.
- ▶ Safety and complete security backed by the U.S. Government.

Some disadvantages are

- ▶ Lack of liquidity. You are barred from cashing them in for at least six months.
- ▶ Relatively lower yield. Note: Instead of exchanging all the bonds, you might be better off selling the EE bonds paying the low rates, putting the proceeds in a high-yielding investment vehicle. Hold onto the higher-yielding EE bonds.

U.S. savings bonds can be purchased without fees at most banks and other financial institutions or through payroll thrift plans. They can be replaced if lost, stolen, or destroyed. Both series must be held at least 6 months before redeeming.

Note:

1. To find out what a particular savings bond is worth, go to any bank that sells the bonds or the Treasury to obtain a redemption value table. Send request to Savings Bond Marketing Office, 800 K. St., NW, Suite 800, Washington D.C., 20226. Or go to the Bureau of Public Debt web site www.publicdebt.treas.gov to find the value of a savings bond.
2. For details involving mistakes and anxieties regarding U.S. Savings and Bonds, refer to a new book by Daniel Pederson, *U.S. Savings Bonds: A Comprehensive Guide for Bond Owners and Financial Professions*, TSBI, Detroit, Michigan. (800) 927-1901.

U.S. savings bond interest rates

U.S. savings bond interest rates are given opposite.

BOND SERIES	REMARKS
Series EE Bonds	<ul style="list-style-type: none"> ▶ EE/E Bonds you purchased between May 1997 and April 30, 2005, earn a variable market-based rate* of return. ▶ Series EE Bonds issue dated May 2005 and after will earn a fixed rate of interest.
Series I Bond	Bonds have an annual interest rate that reflects the combined effects of a fixed rate and a semiannual inflation rate. They are an accrual-type security. Interest is added to the bond monthly and is paid when you cash the bond.
Series HH/H Bonds	<ul style="list-style-type: none"> ▶ As of September 1, 2004, investors are no longer able to reinvest HH/H bonds or exchange EE/E bonds for HH bonds. ▶ HH bonds were available only in exchange for Series EE/E bonds or upon reinvestment of matured Series H bonds.

*for current rate information, visit www.treasFrydirect.gov/indiv/research/indepth/ebonds/res_e_bonds_eeratesandterms.htm

Should you invest in a bond fund?

It is possible that an investor may decide to invest in a bond fund. There are the following three key facts about the bonds in any portfolio.

- ▶ **Quality.** Check the credit rating of the typical bond in the fund. Ratings by Standard & Poor's and Moody's show the relative danger that an issuer will default on interest or principal payments. AAA is the best grade. A rating of BB or lower signifies a junk bond.
- ▶ **Maturity.** The average maturity of your fund's bonds indicates how much you stand to lose if interest rates rise. The longer the term of the bonds, the more volatile is the price. For example, a 20-year bond may fluctuate in price four times as much as a four-year issue.
- ▶ **Premium or discount.** Some funds with high current yields hold bonds that trade for more than their face value, or at a premium. Such funds are less vulnerable to losses if rates go up. Funds that hold bonds trading at a discount to face value can lose the most.

You must keep in mind the following guidelines:

- ▶ Rising interest rates drive down the value of all bond funds. For this reason, rather than focusing only on current yield, you should look primarily at total return (yield plus capital gains from falling interest rates or minus capital losses if rates climb).
- ▶ All bond funds do not benefit equally from tumbling interest rates. If you think interest rates will decline and you want to increase total return, you should buy funds that invest in U.S. Treasuries or top-rated corporate bonds. You should consider high-yield corporate bonds (junk bonds) if you believe interest rates are stabilizing.
- ▶ Unlike bonds, bond funds do not allow the investor to lock in a yield. A mutual fund with a constantly changing portfolio is not like an individual bond, which can be kept to maturity. If you want steady, secure income over several years or more, you should consider, as alternatives to funds, buying individual top-quality bonds or investing in a municipal bond *unit trust*, which maintains a fixed portfolio.

How about considering unit investment trusts?

Like a mutual fund, a unit investment trust offers to investors the advantages of a large, professionally selected and diversified portfolio. Unlike a mutual fund, however, its portfolio is fixed; once structured, it is not actively managed. Unit investment trusts are available with tax-exempt bonds, money market securities, corporate bonds of different grades, mortgage-backed securities; preferred stocks, utility common stocks, and other investments. Unit trusts are most suitable for investors who need a fixed income and a guaranteed return of capital. They disband and pay off investors after the majority of their investments have been redeemed.

Investing in municipal bonds: Three approaches

As discussed earlier, you may consider municipal bonds for tax or income reasons. If you do, you may face three investment choices for diversification: (1) buying them on your own, (2) muni unit investment trust (UIT), and (3) muni mutual funds. If the preservation of capital is of primary importance, the UIT may be a better investment than a mutual fund. Table 8.6 compares aspects of the three approaches.

Table 8.6: Investing in municipal bonds: Three choices

	DIRECT PURCHASE	UIT	MUTUAL FUND
Portfolio policy and management	Your own selection	Passive; no management	Active management
Payments	Twice a year	Monthly	Monthly or automatic reinvestment
Commissions	Usually some percent buy-sell spread	Some percent buy-sell spread plus front-end load	Load or no-load
Investor profile	Experienced with sizable funds	Long-term (10 years)	Smaller and short-term
Interest rate risk	High	Low	Medium
Capital gain/loss potential	High	Low	Medium

What about investing in mortgage-backed securities?

A mortgage-backed security is a share in an organized pool of residential mortgages. Some are pass-through securities where the principal and interest payments on them are passed through to shareholders, usually monthly. There are several kinds of mortgage-backed securities. They include:

- (a) *Government National Mortgage Association (GNMA – Ginnie Mae) securities.* GNMA primarily issues pass-through securities. These securities pass through all payments of interest and principal received on a pool of federally insured mortgage loans. GNMA guarantees that all payments of principal and interest will be made on the mortgages on a timely basis. Since many mortgages are repaid before maturity, investors in GNMA pools usually recover most of their principal investment well ahead of schedule. Ginnie Mae is considered an excellent investment. The higher yields, coupled with the U.S. government guarantee, provide a competitive edge over other intermediate-term to long-term securities issued by the U.S. government and other agencies.
- (b) *Federal Home Loan Mortgage Corporation (FHLMC – Freddie Mac) securities.* Freddie Mac was established to provide a secondary market for conventional mortgages. It can purchase conventional mortgages for its own portfolio. Freddie Mac also issues pass-through securities –called participation

certificates (PCs) – and guaranteed mortgage certificates (GMCs) that resemble bonds. Freddie Mac securities do not carry direct government guarantees and are subject to state and federal income tax.

- (c) *Federal National Mortgage Association (FNMA – Fannie Mae)* securities. The FNMA is a publicly held corporation whose goal is to provide a secondary market for government-guaranteed mortgages. It does so by financing its purchase by selling debentures with maturities of several years and short-term discount notes from 30 to 360 days to private investors. The FNMA securities are not government guaranteed and are an unsecured obligation of the issuer. For this reason, they often provide considerably higher yields than Treasury securities.
- (d) *Collateralized mortgage obligations (CMOs)*. CMOs are mortgage-backed securities that separate mortgage pools into short-, medium-, and long-term portions. You can choose between short-term pools (such as 5-year pools) and long-term pools (such as 20-year pools). CMOs offer high current income from a mortgage security that gets around the problem of uncertainty regarding the timing of principal return. They offer, however, a slightly lower yield than other pass-through securities in exchange for easing that uncertainty. CMOs typically sell in minimum denominations ranging between \$1,000 and \$12,000.

Note: During the 2008-2009 period of financial crisis, when housing prices started to decline, trouble hit these mortgage-backed securities (MBS) and the risky sections started taking on losses. Unemployment, falling property values and weak consumer sentiment have pushed residential mortgage securities down to historically low prices. In many cases, residential mortgage securities are being held at 20 or 30 cents on the dollar, even for performing loans that continue to make payments.

Investing in Options

Warrants, stock rights, options and futures are called *leveraged investments* since you will be able to participate in these investment vehicles with a small sum of money. The value of these instruments are derived from the value of their underlying securities. In this chapter, we discuss the following:

- ▶ The different types of options.
- ▶ The advantages of receiving stock rights from a company already owned.
- ▶ The use of stock warrants in connection with debt issuances.
- ▶ How to determine the value of an option and the rate of return on investment.
- ▶ How to use stock options by hedgers and speculators.
- ▶ The investment approaches of straddles and spreads.
- ▶ The functions of an option writer.

What are options?

Options give you the right to purchase or sell a security at a specified price for a stated period of time. Options possess their own inherent value and are traded in secondary markets. You may want to acquire a call option so that you can take advantage of an expected rise in the price of the underlying stock. Option prices are directly related to the prices of the common stock they apply to. The types of options include stock rights, warrants, and calls and puts. Investing in options is very risky and requires specialized knowledge.

Stock rights

In a stock rights offering, current stockholders have the first right to buy new shares and thus to maintain their present ownership interest. This is known as a preemptive right.

Example 1

Assume that you own 3% of XYZ Company. If the company issues 5,000 additional shares, you may receive a stock rights offering -- a chance to buy 3% or 150 shares, of the new issue.

This right enables you to purchase new common stock at a subscription price (sometimes called an exercise price) for a short time, usually no more than several weeks. This subscription price, or exercise price, is lower than the current market price of the stock.

Example 2

If a company has, say, 2 million shares outstanding and wants to issue another 100,000 shares, each existing stockholder will receive one right per share owned. Thus, a stockholder needs 20 rights in order to buy one new share. One advantage of the stock rights option is of course the lower exercise price. Another is that stockholders do not have to pay a brokerage fee when they buy the additional stock.

Note: Stockholders who do not want to buy additional stock can sell their rights in the secondary market. (Of course, if a right is not used before the expiration date, it no longer has value.)

The value of a right

The value of a right depends on whether the stock is traded "rights-on" or "rights-off." In a rights-on trade, the stock is traded with rights attached so the investor who purchases a share receives the attached stock right. In a rights-off or ex-rights trade, the stock and its rights are separate from each other and are traded in different markets. Regardless of the form of the rights, the value of the right equals

$$\frac{\text{Market price of current stock} - \text{subscription price of new stock}}{\text{Number of rights to purchase one share}}$$

Example 3

Assume the current market price of stock is \$30 a share. The new share has an exercise price of \$26. An investor needs two rights to obtain one new share. The right equals:

$$\frac{\$30 - \$26}{2} = \frac{\$4}{2} = \$2$$

Provided the stock price holds at around \$30 a share, the right has a value of \$2.

Stock warrants

A warrant is an option to purchase a certain number of shares at a stated price for a specified time period at a subscription price that is higher than the current market price. A warrant may or may not come in a one-to-one ratio with stock already owned. Unlike an option, a warrant is usually good for several years; some, in fact, have no maturity date.

Warrants are often given as sweeteners for a bond issue. This allows the firm to float the debt or issue the bond at a lower interest rate. Warrants included with a bond may also occur in a merger when the acquiring company offers cash plus warrants in exchange for the voting common stock of the acquired business.

Generally, warrants are detachable from the bond, once it has been issued. Detachable warrants have their own market price. So even though warrants are exercised, the debt with which they were first issued still exists. Also, stock warrants may be issued with preferred stock. Most warrants are traded on the AMEX, and some are traded on the NYSE.

Warrants are not frequently issued and are not available for all securities. They pay no dividends and carry no voting privileges. The warrant enables the holder to take part indirectly in price appreciation of common stock and to obtain a capital gain. One warrant usually equals one share, but in some cases more than one warrant is needed to get one share.

Warrants can be bought from a broker. The price of a warrant is listed along with that of the common stock of the company. Brokerage fees for warrants are the same as those for stocks and depend on the market price of the security.

When the price per common share goes up, the holder of the warrant may either sell it (since the warrant also increases in value) or exercise the warrant and get the stock. Trading in warrants is speculative; there is potential for high return, but high risk exists because of the possibility of variability in return.

Example 4

Assume a warrant of XYZ Company stock enables you to purchase one share at \$25. If the stock increases past \$25 before the expiration date, the warrant increases in value. If the stock goes below \$25, the warrant loses its value.

The exercise price for a warrant is usually constant over the warrant's life. However, the price of some warrants may rise as the expiration date approaches. Exercise price is adjusted for stock splits and large stock dividends.

Return on a warrant

The return on a warrant for a holding period of no more than one year equals:

$$\frac{\text{Selling price} - \text{acquisition price}}{\text{Acquisition price}}$$

Example 5

Assume that you sell a warrant at \$21. That same warrant costs you only \$12. The return is:

$$\frac{\$21 - \$12}{\$12} = \frac{\$9}{\$12} = 75\%$$

The return on a warrant for a holding period in excess on one year equals:

$$\frac{\text{Selling price} - \text{acquisition price}}{\frac{\text{Years}}{\text{Average investment}}}$$

Note: Warrants are speculative because their value depends on the price of the common stock for which they can be exchanged. If stock prices fluctuate widely, the value of warrants will sharply vacillate.

The value of a warrant

The value of a warrant is greatest when the market price of the related stock is equal to or greater than the exercise price of the warrant. The value of a warrant thus equals:

(Market price of common stock - exercise price of warrant) x number of common stock shares bought for one warrant

Example 6

Suppose that a warrant has an exercise price of \$25. Two warrants equal one share. The market price of the stock is \$30. The warrant has a value of:

$$(\$30 - \$25) \times .5 = \$2.50$$

Usually the market value of a warrant is greater than its intrinsic value, or premium, because of the speculative nature of warrants. Typically, as the value of a warrant goes up, the premium goes down. Premium equals the market price of the warrant minus its intrinsic value.

Example 7

If the warrant referred to above has a market price of \$4.00, the premium is \$1.50. Assume that \$100,000 in bonds are issued. There are therefore 100 bonds. Each bond

has eight warrants attached. Each warrant permits the investor to purchase one share of stock at \$12 until one year from the date of the bond. The warrant will have no value at the issue date if the stock is selling below \$12. If the stock increases in value to \$25 a share, the warrant will be worth about \$13. The eight warrants will thus be worth approximately \$104.

Example 8

Assume XYZ common stock is \$40 per share. One warrant can be used to buy one share at \$34 in the next three years. The intrinsic (minimum) value per warrant is \$6 = $(\$40 - \$34) \times 1$. Because the warrant has three years left and can be used for speculation, it may be traded at an amount higher than \$6. Assuming the warrant was selling at \$8, it has a premium of \$2. The premium is the \$2 difference between the warrant price and intrinsic value.

Even when the stock is selling for less than \$34 a share, there might be a market value for the warrant because speculators may wish to buy it on the expectation of an attractive increase in common stock price in the future.

Example 9

If the common stock was at \$30, the warrant has a negative intrinsic (minimum) value of \$4, but the warrant might have a dollar value of say \$1 because of an expected rise in common stock value.

Leverage effect of a warrant

You may use the leveraging effect to boost your dollar returns.

Example 10

Let's say that you have \$7,000 to invest. If you purchase common stock when the market price is \$35 a share, you can buy 200 shares. If the price increases to \$41 a share, you will have a capital gain of \$1,200. But if you invest the \$7,000 in warrants priced at only \$7 a share, you can acquire 1,000 of them. (One warrant equals one share.)

If the price of the warrants increases by \$6, your profit will be \$6,000. In this instance you earn a return of only 17.1% on the common stock investment whereas on the warrants you get a return of 85.7%.

On the other hand, assume the price of the stock drops by \$6. If you invest in the common stock you will lose \$1,200 for a remaining equity of \$5,800. However, if you invest in the warrant you will lose everything (assuming no warrant premium exists).

Note: If an investor is to get maximum price potential from a warrant, the market price of the common stock must equal or exceed the warrant's exercise price. Also, lower-priced issues offer greater leverage opportunity. Furthermore, a warrant with a low unit price

generates higher price volatility and less downside risk, and thus is preferable to a warrant with a high unit price.

Warrants can be used to protect a speculative transaction. For example, assume an investor sells a stock short and the price rises. The speculator cannot keep the short position continually open, and it may be too costly to wait till the stock goes down. To protect the short sale the investor may purchase a warrant fixing the purchase price and limiting the potential loss on the trade.

Example 11

Assume that you sell short 100 shares at \$15 each. Then you buy warrants for 100 shares at \$13 a share. The cost of the warrant is \$3, or 3 points a share, a total of \$300. In effect, you are buying the stock at \$16 a share. Thus, if the stock rises above \$15, your loss is limited to \$1 a share.

Here are some of the advantages of warrants:

- ▶ The price change in a warrant follows that of the related common stock, making a capital gain possible.
- ▶ The low unit cost allows the investor to obtain a leverage opportunity in the form of lowering the capital investment without damaging the investment's capital appreciation. This increases the potential return.
- ▶ Lower downside risk potential exists because of the lower unit price.

These are the disadvantages of warrants:

- ▶ If no price appreciation occurs before the expiration date, the warrant loses its value.
- ▶ The warrant holder receives no dividends.
- ▶ Investment in warrants requires extensive study and experience.

Calls and puts

Calls and puts are another type of stock option. You can buy or sell them in round lots, usually 100 shares. *Note:* A contractual arrangement that gives the owner the right to buy or sell an asset at a fixed price at any moment in time before or on a specified date is called an *American option*.

When you purchase a call, you are buying the right to purchase stock at a fixed price. You do this when you expect the price of that stock to rise. In buying a call you stand a chance of making a significant gain from a small investment, but you also risk losing your full investment if the stock does not rise in price. Calls come in bearer negotiable form and have a life of one month to nine months.

Purchasing a put gives you the right to sell stock at a fixed price. You might buy a put when you expect a stock price to fall. By purchasing a put you get an opportunity

to make a considerable gain from a small investment, but you will lose the entire investment if the stock price does not fall. Like calls, puts come in bearer negotiable form and have a life of one month to nine months.

Calls and puts are typically written for widely held and actively traded stock on organized exchanges. The Appendix of this chapter provides a list of options available on companies' common stock.

With calls there are no voting privileges, ownership interest, or dividend income. However, option contracts are adjusted for stock splits and stock dividends.

Note: The life of calls and puts is shorter than that of warrants but longer than that of rights. They are similar to warrants in that they are an alternative investment to common stock, leverage opportunity, and speculative investment.

Calls and puts are not issued by the company with the common stock but rather by option makers or option writers. The maker of the option receives the price paid for the call or put minus commission costs. The option trades on the open market. Calls and puts are written and can be acquired through brokers and dealers. The writer is required to purchase or deliver the stock when requested.

Holders of calls and puts do not necessarily have to exercise them to earn a return. They can trade them in the secondary market for whatever their value is. The value of a call increases as the underlying common stock goes up in price. The call can be sold on the market before its expiration date.

Calls and puts are traded on listed option exchanges, which are secondary markets like the Chicago Board Options Exchange, American Stock Exchange, Philadelphia Stock Exchange, and Pacific Stock Exchange. They are also traded in the OTC markets. Option exchanges deal only in the purchase and sale of call and put options. Listed options are options traded on organized exchanges. Conventional options are those options traded in the OTC market.

The Options Clearing Corporation issues calls listed on the options exchanges. Orders are placed with this corporation, which then issues the calls or closes the position. No certificates are issued for options, so the investor must have a brokerage account. When a holder exercises a call, he goes through the Clearing Corporation, which picks at random a writer from member accounts. A call writer would be required to sell 100 shares of the common stock at the exercise price.

Exchanges permit general order (*i.e.*, limit) and orders applicable only to option (*i.e.*, spread order).

The price per share for 100 shares, which the purchaser may buy at (call), is referred to as the *strike price (exercise price)*. For a put, it is the price at which the stock may be sold. The purchase or sale of the stock is to the writer of the option. The striking price is set for the life of the option on the options exchange. When stock price changes, new exercise prices are introduced for trading purposes reflecting the new value.

In case of conventional calls, restrictions do not exist on what the striking price should be. However, it is usually close to the market price of the stock it relates to. But in the case of listed calls, stocks having a price lower than \$50 a share must have striking prices in \$5 increments. Stocks between \$50 and \$100 have striking prices in \$20 increments. Striking prices are adjusted for material stock splits and stock dividends.

The expiration date of an option is the last day it can be exercised. For conventional options, the expiration date can be any business day; for a listed option there is a standardized expiration date. *Note:* For all practical purposes, listed stock options always expire on the third Friday of the month of expiration.

The cost of an option is referred to as a premium. It is the price the purchaser of the call or put has to pay the writer. (With other securities, the premium is the excess of the purchase price over a determined theoretical value.)

The premium for a call depends on:

- ▶ The dividend trend of the related security
- ▶ The volume of trading in the option
- ▶ The exchange on which the option is listed
- ▶ The variability in price of the related security (A higher variability means a higher premium because of the greater speculative appeal of the option.)
- ▶ Prevailing interest rates
- ▶ The market price of the stock it relates to
- ▶ The width of the spread in price of the stock relative to the option's exercise price (A wider spread means a higher price.)
- ▶ The amount of time remaining before the option's expiration date (The longer the period, the greater the premium's value.)

In-the-money and out-of-the-money call options

When the market price exceeds the strike price, the call is said to be "in-the-money." But when the market price is less than the strike price, the call is "out-of-the-money."

Call options in-the-money have an intrinsic value equal to the difference between the market price and the strike price.

$$\text{Value of call} = (\text{market price of stock} - \text{exercise price of call}) \times 100$$

Note: The lower the exercise price, the more valuable the call option.

Example 12

Assume that the market price of a stock is \$45, with a strike price of \$40. The call has a value of \$500.

Note: Out-of-the-money call options have no intrinsic value.

If the total premium (option price) of an option is \$7 and the intrinsic value is \$3, there is an additional premium of \$4 arising from other considerations. In effect, the total premium consists of the intrinsic value plus speculative premium (time value) based on factors such as risk, variability, forecasted future prices, expiration date, leverage, and dividend.

$$\text{Total premium} = \text{intrinsic value} + \text{speculative premium}$$

In-the-money and out-of-the-money put options

The definition of in-the-money and out-of-the-money are different for puts because puts permit the owner to sell stock at the strike price. When strike price exceeds market price of stock, we have an in-the-money put option. Its value is determined as follows:

$$\text{Value of put} = (\text{exercise price of put} - \text{market price of stock}) \times 100$$

Example 13

Assume the market price of a stock is \$53 and the strike price of the put is \$60. The value of the put is \$700.

When market price of stock exceeds strike price, there is an out-of-the money put. Because a stock owner can sell it for a greater amount in the market than he could get by exercising the put, there is no intrinsic value of the out-of-money put.

Figure 9.1

	XYZ Calls at 50 Strike Price & Stock Price:	XYZ Puts at 50 Strike Price & Stock Price
In-the-money:	Over 50	Under 50
At-the-money:	50	50
Out-of-the-money:	Under 50	Over 50

The theoretical value for calls and puts indicate the price at which the options should be traded. But typically they are traded at prices higher than true value when options have a long period to go.

This difference is referred to as investment premium.

$$\text{Investment premium} = \frac{\text{option premium} - \text{option value}}{\text{option value}}$$

Example 14

Assume that a put has a theoretical value of \$1,500 and a price of \$1,750. It is therefore traded at an investment premium of 16.67% $[(\$1,750 - \$1,500)/\$1,500 = \$250/\$1,500]$

Calls

The call purchaser takes the risk of losing the entire price he or she paid for the option if a price increase does not incur. For example, assume a two-month call option allows you to acquire 500 shares of XYZ Company at \$20 per share. Within that time period, you exercise the option when the market price is \$38. You make a gain of \$9,000 before paying the brokerage commission. If the market price had declined from \$20 you would not have exercised the call option, and you would have lost the cost of the option.

By buying a call you can own common stock for a fraction of the cost of purchasing regular shares. Calls cost significantly less than common stock. Leverage is obtained because a little change in common stock price can result in a major change in the call option's price. An element of the percentage gain in the price of the call is the speculative premium attributable to the remaining time left on the call. Calls can also be viewed as a means of controlling 100 shares of stock without a large dollar investment.

Significant percentage gains on call options are possible from the low investment compared to the price of the related common stock.

Example 15

Assume that a stock has a present market price of \$35. A call can be purchased for \$300 allowing an acquisition of 100 shares at \$35 each. If the price of the stock increases, the call will also be worth more. Assume that the stock is at \$55 at the call's expiration date. The profit is \$20 on each of the 100 shares of stock in the call, or a total of \$2,000 on an investment of \$300. A return of 667% is thus earned. In effect, when the holder exercises the call for 100 shares at \$35 each, he or she can immediately sell them at \$55 per share.

Note: The investor could have earned the same amount by investing directly in the common stock, but the investment would have been \$3,500 so the rate of return would have been significantly lower.

You can buy ABC Company stock at \$30 a share, or \$3,000 for 100 shares. You can acquire a \$33 three-month call for \$400. Thus, you could invest \$2,600 cash and have the opportunity to buy 100 shares at \$33. Assume, however, that you decide to invest your \$2,600 in a three-month CD earning 4% interest. The CD will return \$26 ($4\% \times \$2,600 \times 3/12$). If the ABC Company stock goes to \$16, the option will be worthless but the significant loss on the stock of \$14 a share did not occur. Rather, the loss is limited to \$374 ($\$400 - \26). However, note that by not buying a stock you may have foregone a dividend.

If the stock went up to \$43, the call would be exercised at \$33 resulting in a sizable gain with little investment.

Here is another example of call trading. Assume that a call gives you the right to acquire 100 shares of \$30 stock at \$27. The call will trade at a price of about \$3 a share.

Call options may also be used when you believe the stock price will increase in the future but you have a cash flow problem and are unable to buy the stock. However, you will have sufficient cash to do so later. In this situation, you can buy a call so as not to lose a good investment opportunity.

Example 16

On February 6 you purchase a \$32 June call option for \$3 a share. If the stock has a market price of \$34 1/2, the speculative premium is \$0.50. In June, you exercise the call option when the stock price is \$37. The cost of the 100 shares of stock for tax reporting is the strike price (\$32) plus the option premium (\$3), or \$35.

Puts

The put holder may sell 100 shares at the strike price for a given period to a put writer. A put is purchased when there is an anticipation of a price decline. The maximum loss is the premium cost (investment), which will be lost if the price of the stock does not drop.

Let's suppose that a stock has a market price of \$35. You acquire a put to sell 100 shares of stock at \$35 per share. The cost of the put is \$300. At the exercise date of the put, the price of the stock goes to \$15 a share. You therefore realize a profit of \$20 per share, or \$2,000. As the holder of the put, you simply buy on the market 100 shares at \$15 each and then sell them to the writer of the put for \$35 each. The net gain is \$1,700.

Example 17

Assume that the stock's price was \$55 on March 2. You buy a \$56 June put for \$4. The speculative premium is therefore \$3. On June 7, the stock price falls to \$47 and the price of the June \$56 put to \$8. The intrinsic value is \$9 and the speculative premium is \$1. As the put holder, you now have a gain of \$4.

Note: The most important factor affecting the market price of a put or call is the price behavior of the underlying common stock.

Call and put investment strategies

The investment approaches one can take with calls and puts include (1) hedging, (2) speculation, (3) straddles, and (4) spreads.

Owners of call and put options can hedge by holding on to two or more securities to lower risk and at the same time make some profit. It may involve buying a stock and later purchasing an option on it.

For example, a stock may be bought along with writing a call on it. Also, a holder of stock that has risen in price may buy a put to furnish downside risk protection.

Example 18

As an example of hedging, let's say that you buy 100 shares of XYZ at \$26 each and a put for \$200 on the 100 shares at an exercise price of \$26. If the stock remains static, you will lose \$200 on the put. If the price decreases, your loss on the stock will be offset by your gain on the put. If stock price rises, you'll earn a capital gain on the stock and lose your investment in the put. In other words, to get the benefit of a hedge, you have to incur a loss on the put. (Also note that at expiration of the put, you incur a loss with no further hedge.)

You can also buy a put to hedge your position after making a profit on the stock. For example, let's say you hold 100 shares of XYZ stock purchased at \$60 a share. That stock increased to \$80, earning a profit of \$20 a share. To guarantee your profit you buy a put with an \$80 exercise price at a cost of \$300. No matter what happens later, you will have a minimum gain of \$1,700. If the stock falls, your minimum profit will be \$1,700, but if the stock price rises, you'll realize an additional profit. Some other time you might buy a call to protect a short sale from the risk of increasing stock price.

Calls and puts may also be used for speculation as an alternative to investment in the related stocks. The idea is buy low and sell high. You would acquire options when you think you will earn a higher return than you would by investing in the underlying stock. In general, you can obtain a higher return rate at lower risk with out-of-the-money options. The problem with out-of-the-money options is that price consists only of the investment premium, which you can lose if the stock does not rise.

Here is an example of this kind of speculation.

Example 19

A speculator purchases an option contract to buy 100 shares at \$25 a share. The option costs \$150. Assume a rise in stock price to \$33 a share. The speculator exercises the option and sells the shares in the market, realizing a gain of \$650 ($\$33 - \$25 - \$1.50 = \6.50×100 shares). Now the speculator can sell the option in the market and make a profit because of its increased value. However, if there is a decline in stock price, the loss to the holder is limited to \$150 (the option's cost). Of course, brokerage fees are also involved. In effect, this call option permitted the speculator to purchase 100 shares worth \$2,500 for \$150 for a short period.

"Straddling" integrates a put and call on the same stock with the identical strike price and exercise date. It is used by a speculator trading on both sides of the market. This speculator hopes for significant movement in stock price in one direction so as to make a gain that exceeds the cost of both options. If the price movement does not go as expected, however, the loss will equal the cost of the options. The straddle holder may widen risk and profit potential by closing one option before closing the other.

Example 20

You buy a call and put for \$4 each on September 30 when the stock price is \$42. The expiration period is four months. The investment is \$8, or \$800 in total. Assume the stock increases to \$60 at expiration of the options. The call earns a profit of \$14 (\$18 - \$4) and the loss on the put is \$4. Your net gain is \$10, or \$1,000 all together.

A “spread” is the purchase of an option (long position) and the writing of an option (short position) in the same security, using call options. Sophisticated investors may write many spreads to gain from the differences in option premiums. Return potential is significant, but the risk is very high. There are different types of spreads:

- ▶ A vertical spread is the purchase and writing of two contracts at different striking prices with the same expiration date.
- ▶ A horizontal spread is the purchase and writing of two options with the same strike price but for different periods.
- ▶ A diagonal spread combines the horizontal and vertical.

Spreads require the investor to buy one call and sell another call. The gain or loss from a spread position depends on the change between two option prices as the price of the stock increases or decreases. The difference between two option prices is the price spread.

The speculator who uses a vertical bull spread anticipates an increase in price of stock, but this strategy reduces the risk. Here there is a ceiling on the gain or loss.

A speculator using a vertical bear spread expects the stock price to decline. This investor sells short the call with the lower strike price and places a cap on upside risk by buying a call with a higher strike price.

Puts, straddles, and spreads may be bought either to maximize return or to minimize risk. They are not traded on listed exchanges but rather must be acquired through brokerage houses and members of the Put and Call Brokers and Dealers Association.

Those who employ straddles, spreads, and other similar strategies often use extensive computer analysis. These investment approaches should be left to very sophisticated investors.

Option writing

The writer of a call agrees to sell shares at the strike price for the price paid for the call option. Call option writers do the opposite of what buyers do. Investors write options because they believe that a price increase in the stock will be less than what the call purchaser expects. They may even expect the price of the stock to remain static or to decrease. Option writers receive the option premium minus related transaction costs. So if the option is not exercised the writer earns the price paid for it. However, when an option is exercised, the writer suffers a loss, sometimes quite a significant one.

When the writer of an option decides to sell, he/she must come up with the stock at the agreed-upon price if the option is exercised. In either case, the option writer receives income from the premium. (Shares are sold in denominations of 100.) An investor usually sells an option when he or she expects it not to be exercised. The risk of option writing is that the writer, if uncovered, must buy stock or, if covered, loses the gain. As the writer, you can buy back an option to terminate your exposure.

Example 21

Assume the strike price is \$40 and the premium for the call option is \$5. If the stock is at less than \$40, the call would not be exercised, and you would earn the premium of \$5. If the stock exceeds \$40, the call may be exercised, and you must provide 100 shares at \$40. However, the call writer would lose money only if the stock price exceeded \$45.

Naked or covered options

Options may be “naked” (uncovered) or “covered.” Naked options are options on stock that the writer does not own. The investor writes the call or put for the premium and will keep it if the price change is in his/her favor or immaterial in amount. But the writer’s loss exposure is unlimited. Covered options are written against stocks the writer owns and are not quite as risky. For example, a call can be written for stock the writer owns or a put can be written for stock sold short. This is a conservative mechanism to obtain positive returns. The goal is to write an out-of-the-money option, keep the premium paid, and have the market price of the stock equal but not exceed the option exercise price. The writing of a covered call option is similar to hedging a position since if stock price falls, the writer’s loss on the stock is partly netted against the option premium.

Futures Contracts

Futures is another derivative instrument. In the futures market, you trade in commodities and financial instruments. A futures is a contract to purchase or sell a given amount of an item for a given price by a certain date (in the future--thus the name "futures market"). The seller of a futures contract agrees to deliver the item to the buyer of the contract, who agrees to purchase the item. The contract specifies the amount, valuation, method, quality, month, and means of delivery, and exchange to be traded in. The month of delivery is the expiration date; in other words, the date on which the commodity or financial instrument must be delivered.

Derivatives, including options and futures, are contracts between the parties who contract. Unlike stocks and bonds, they are not claims on business assets. A futures contract is entered into as either a speculation or hedge. Speculation involves the assumption of risk in the hope of gaining from price movements. Hedging is the process of using offsetting commitments to minimize or avoid the impact of adverse price movements.

What is a futures contract?

A futures contract is somewhat like a home sale, in which the buyer and seller agree on:

1. the quantity of the commodity;
2. the price to be paid; and
3. a future date for delivery.

Commodity contracts are guarantees by a seller to deliver a commodity (e.g., cocoa or cotton). Financial contracts are a commitment by the seller to deliver a financial instrument (e.g., a Treasury bill) or a specific amount of foreign currency. Figures 10.1 and 10.2 shows the types of commodity and financial futures available.

Figure 10.1: Commodities futures

GRAINS & OILSEEDS	LIVESTOCK & MEAT	FOOD, FIBRE, & WOOD	METALS & PETROLEUM
Barley	Broilers	Butter	Copper
Canola	Beef -- Boneless	Cheddar Cheese	Gold
Corn	Cattle -- Feeder	Cocoa	Palladium
Flaxseed	Cattle -- Live	Coffee	Silver
Oats	Cattle -- Stocker	Cotton #2	Silver -- 1000 oz.
Peas -- Feed	Hogs -- Lean	Lumber	Light Sweet Crude
Rice -- Rough	Pork Bellies -- Fresh	Milk Bfp	Heating Oil
Rye	Pork Bellies -- Frozen	Milk -- Non-Fat Dry	Natural Gas
Soybeans	Turkeys	Orange Juice	Platinum
Soybean Meal		Oriented Strand Board	High-Grade Copper
Soybean Oil		Potatoes	Mercury
Wheat - Duram		Rice	Propane
Wheat		Shrimp -- Black Tiger	Unleaded Gasoline
Wheat -- Feed		Shrimp White	Palo Verde Electricity
Wheat -- Spring		Sugar	Twin City Electricity
Wheat -- White		Sugar-World	
Wheat -- Winter			

Figure 10.2: Financial futures

CURRENCIES	INTEREST RATES	SECURITIES	INDEXES
Australian Dollar	Eurodollars	Bank Cds	Dow Jones Industrials
Brazilian Real	Federal Funds -- 30 Days	GNMA Passthrough	Eurotop 100 Index
British Pound	Libor -- 1-Month	Stripped Treasuries	Goldman Sachs
Canadian Dollar	Treasury Bills		Major Market
Euro	Treasury Bonds -- 30-Year		Municipal Bond Index

CURRENCIES	INTEREST RATES	SECURITIES	INDEXES
French Franc	Treasury Notes -- 10-Year		NASDAQ 100
German Mark	Treasury Notes -- 2-Year		Nikkei 225
Japanese Yen	Treasury Notes -- 5-Year		Nyse Composite
Mexican Peso			PSE 100 Tech
Russian Ruble			Russell 1000
S. African Rand			Russell 2000
Swiss Franc			S&P 400 MidCap
Thai Baht			S&P 500
U.S. Dollar			S&P 500 -- Mini
			S&P Barra -- Growth
			S&P Barra -- Value
			Value Line
			Value Line -- Mini

What Is the difference between a long and short position?

A long position is the purchase of a contract expecting the price to increase. A short position is selling expecting price to decrease. The position may be terminated by reversing the transaction. For example, the long buyer can subsequently engage in a short position of the commodity or financial instrument. Mostly all futures are offset (canceled out) prior to delivery. It is unusual for delivery to settle the futures contract.

How are futures contracts traded?

A futures contract is traded in the futures market. Trading is performed by specialized brokers. Some commodity firms deal exclusively in futures. The fee for a futures contract is tied to the amount of the contract and the item's price. Commissions vary depending on the amount and nature of the contract. The trading in futures is basically the same as with stocks, except the investor needs a commodity trading account. However, the margin buying and the types of orders are the same. You buy or sell contracts with desired terms.

Is futures trading very risky?

Futures trading may assist an investor handling inflation but is specialized with much risk. Your loss may be magnified due to leverage. Leverage (use of other people's money) means that with minimal down payment, you control something of much greater value. For instance, you can put down \$2,000 to control a futures contract valued at \$40,000. Each time the price of a commodity increases \$1 you could earn or lose \$20. With a *futures option*, you just lose money invested. With a futures, you lose a lot more. Further, futures contract prices may be very unstable. However, many exchanges place per day price limits on each contract trading to insulate traders from huge losses.

What are commodities futures?

A commodity contract involves a seller who contracts to deliver a commodity by a specified date at a set price. The contract stipulates the item, price, expiration date, and standardized unit to be traded (e.g., 100,000 pounds). Commodity contracts may last up to one year. You must always appraise the impact of market activity on the contract's value.

Assume that you purchase a futures contract for the delivery of 2,000 units of a commodity six months from now at \$5.00 per unit. The seller of the contract does not have to have physical custody of the item, and the contract buyer does not have to take possession of the commodity at the "deliver" date. Commodity contracts are typically reversed, or terminated, before consummation. For example, as the initial buyer of 5,000 bushels of wheat, you may engage in a similar contract to sell the same amount, in effect closing your position.

You may enter into commodity trading to achieve high return rates and hedge inflation. In times of increasing prices, commodities react favorably because they are tied to economic trends. However, there is high risk and uncertainty exist since commodity prices fluctuate and there is a lot of low-margin investing. You need a lot of cash in case of a margin call to cover losses. To minimize risk, hold a diversified portfolio. Futures contracts are only for knowledgeable and experienced investors.

The buyer of a commodity can opt to terminate the contract or continue holding on expectation of higher profits. Conversely, the investor may use the earnings to furnish margin on another futures contract (called an inverse pyramid in a futures contract).

Commodity futures allow buyers and sellers to negotiate cash (spot) prices. Cash is paid to immediately obtain custody of a commodity. Prices in the cash market depend partly upon prices in the futures market. There may be higher prices for the commodity over time, taking into account carrying costs and expected inflation.

Commodity futures are traded in the *Chicago Board of Trade (CBOT)*, the largest exchange. There are other exchanges specializing in particular commodities such as

the *New York Cotton Exchange (NCTN)*, *Chicago Mercantile Exchange (CME)*, and *Kansas City Board of Trade (KBOT)*. Because of the possibility of substantial gains and losses in commodities, exchanges have caps on the highest daily price changes for a commodity. The *Federal Commodity Futures Trading Commission* regulates commodities exchanges. Commodity futures trading is accomplished through open outcry auction.

What returns and risks are there for futures contracts?

The return on a futures contract stems from capital appreciation (selling price less acquisition cost) because no current income is earned. Significant capital gain may arise from price fluctuation in the commodity and the impact of leverage due to low margin. If things go against you, much of your investment may be lost. The return on investment in commodities (a long or short position) equals:

$$\frac{\text{Selling price} - \text{purchase price}}{\text{Margin deposit}}$$

Example 1

Assume you buy a contract on a commodity for \$80,000, with a deposit of \$10,000. Subsequently, you sell the contract for \$85,000. The return is:

$$\frac{\$85,000 - \$80,000}{\$10,000} = 50\%$$

The margin requirement for commodity contracts is small, typically from 3% to 6% of the contract's value. (For stocks, recall that the margin requirement was 50%). Because in commodities trading there is no loan involved, there is no interest.

An *initial margin* deposit must be made on a futures contract so as to cover a drop in market price on the contract. Such deposit varies with the type of contract and the particular commodity exchange.

A *maintenance deposit* may also be required, which is lower than the initial deposit. It furnishes the minimum margin that must be kept in the account. It is typically about 80% of the initial margin.

Example 2

On September 1, you contract to purchase 50,000 pounds of sugar at \$2 a pound to be delivered by December 31. The value of the total contract is \$100,000. The initial margin requirement is 15%, or \$15,000.

The margin maintenance requirement is 80%, or \$12,000. Assuming a contract loss of \$2,500, you must pay \$2,500 to cover the margin position. If not, the contract will be terminated with the ensuing loss.

Who employs futures?

Trading in futures is performed by hedgers and speculators. Investors employ hedging to protect their position in a commodity. For instance, a farmer (the seller) may hedge to obtain a higher price for his goods while a processor (or buyer) of the product will hedge to get a lower price. By hedging you reduce the risk of loss but forego earning a sizable profit.

Example 3

A commodity is presently selling at \$160 a pound. The potential buyer (assume a manufacturer) anticipates the price to increase. To protect against higher prices, the purchaser buys a futures contract selling at \$175 a pound. Five months later, the commodity price is \$225. The futures contract price will similarly increase to say, \$250. The buyer's profit is \$75 a pound. If 10,000 pounds are involved, the total profit is \$750,000. However, the cost on the market rose by only \$65 pound, or \$650,000. The producer has hedged his position, deriving a profit of \$100,000, and has put a tip on the rising commodity costs.

Commodities may also be used for speculation in the market. Speculators engage in futures contracts to obtain capital gain on price increases of the commodity, currency, or financial instrument. Speculation involves the assumption of risk in the hope of gaining from price movements. Hedging is the process of using offsetting commitments to minimize or avoid the impact of adverse price movements.

Example 4

You buy a September futures contract for 20,000 pounds of wheat at \$2 a pound. If the price rises to \$2.20, you'll gain \$.20 a pound for a total gain of \$4,000. The percent gain, assuming an initial margin requirement of 5%, is 200% (\$.2/\$.1). Assuming transactions occur over a three-month period, the annual gain would be 800% (200% x 12 months/3 months). This resulted from a mere 10% (\$.2/\$2.00) gain in the price of a pound of wheat.

What ways are available to minimize risks?

Spreading capitalizes on wide swings in price and at the same time limits loss exposure. Spreading is like stock option trading. You engage in at least two contracts to earn some profit while capping loss potential. You buy one contract and sell the other expecting to achieve a reasonable profit. If the worst occurs, the spread aids in minimizing the investor's loss.

Example 5

You buy Contract A for 20,000 pounds of commodity T at \$300 a pound. Simultaneously, you sell short Contract B for 20,000 pounds of the identical commodity at \$325 per pound. Later, you sell Contract A for \$325 a pound and buy Contract B for \$360 a pound. Contract A earns a profit of \$25 a pound while Contract B has a loss of \$20 a pound. The net effect is a profit of \$5 a pound, or a total gain of \$100,000.

What are financial futures?

Financial futures include: (1) interest rate; (2) foreign currency; and (3) stock-index. Financial futures trading is similar to commodity trading. It represents about 70 percent of all contracts. Due to fluctuation in interest and exchange rates, financial futures can be used as a hedge. They may also be used to speculate, having potential for wide price swings. Financial futures have a *lower* margin requirement than commodities do. For instance, the margin on a U.S. Treasury bill might be as low as 2%.

Financial futures are traded in the *New York Futures Exchange*, *Amex Commodities Exchange*, *International Monetary Market* (part of *Chicago Mercantile Exchange*), and the *Chicago Board of Trade*.

How do interest rate futures work?

An interest rate futures contract gives the holder the right to a specified amount of the underlying debt security at a later date (typically not exceeding three years). They may be in such forms as Treasury bills, notes, and bonds, paper, "Ginnie Mae (GNMA)" certificates, CRB Index, Eurodollars, and U.S. Dollar Index.

Interest rate futures are expressed as a percentage of the face value of the applicable debt security. The value of interest rate futures contracts is linked to interest rates. For instance, as interest rates drop, the contract's value rises. If the price or quote of the contract increases, the buyer gains but the seller loses. A change of one basis point in interest rates causes a price change. A basis point equals 1/100 of 1%.

Those trading in interest rate futures do not typically take custody of the financial instrument. The contract is employed either to hedge or to speculate on future interest rates and security prices.

How do currency futures work?

A *currency futures contract* provides the right to a stipulated amount of foreign currency at a later date. The contracts are standardized, and secondary markets exist. Currency futures are stated in dollars per unit of the underlying foreign currency. They usually have a delivery not exceeding one year.

Currency futures may be used to either hedge or speculate. Hedging in a currency may lock you into the best possible money exchange.

What Is a stock index futures contract?

A *stock-index futures contract* is linked to a stock market index (e.g., the *S & P 500 Stock Index*, *New York Stock Exchange Composite Stock Index*) But smaller investors can use the *S & P 100* futures contract which has a lower margin deposit. Stock-index futures permits allow you to participate in the overall stock market. You can buy and sell the “market as a whole” instead of one security. If you expect a bull market but are not certain which stock will increase, you should purchase (long position) a stock-index future. Since there is a lot of risk, trade in stock-index futures only to hedge.

How do you transact in futures?

You may invest directly in a commodity or indirectly through a *mutual fund*. A third way is to buy a *limited partnership* involved with commodity investments. The mutual fund and partnership approaches are more conservative, because risk is spread among investments.

Futures may be directly invested as follows:

- (1) *Commodity pools*. Professional traders manage a pool. A filing is made with the *Commodity Futures Trading Commission (CFTC)*.
- (2) *Full service brokers*. They may recommend something when attractive.
- (3) *Discount brokers*. You must decide on your own when and if.
- (4) *Managed futures*. You deposit funds in an individual managed account and choose a *commodity trading advisor (CTA)* to trade it.

To obtain information on managed futures, refer to:

1. *ATA Research Inc.* provides information on trading advisors and manages individuals accounts via private pools and funds..
2. *Barclay Trading Group* publishes quarterly reports on trading advisers.
3. *CMA Reports* monitors the performance of trading advisers and private pools.
4. *Management Account Reports*, monthly newsletters, tracking the funds and furnishes information on their fees and track records.
5. *Trading Advisor* follows more than 100 trading advisers.

There are several drawbacks to managed futures, including:

1. High cost of a futures program, ranging from 15 to 20 percent of the funds invested.
2. Substantial risk and inconsistent performance of fund advisers.

Note: Despite its recent popularity, management futures is still a risky choice and should not be done apart from a well-diversified portfolio.

Global Investing

As you learn more about portfolio management and mutual funds, it becomes increasingly clear that there are advantages to holding a broad range of investment vehicles. A few interesting developments: (1) Seven of the 10 best performing large-cap stocks in the U.S. last year were American depositary receipts (ADRs), or U.S.-listed shares of foreign firms in 2006. (2) Net foreign stocks and bonds purchased by U.S. residents reached \$39.1 billion in November 2006 alone.

In this chapter, you will see that risk can further be reduced by holding securities issued in foreign markets. Global investing involves the direct or indirect acquisition of foreign securities by individuals or institutions without any control over or participation in the management of the foreign companies. Interest in overseas equities has increased notably in the recent years, spurred by the strong performance of markets abroad and the relatively easy availability of overseas investment vehicles for U.S. investors. *Note:* An individual who purposely accepts exchange rate risk is a speculator. Speculators buy and sell foreign currencies in anticipation of favorable changes in rates.

What are the advantages of global investing?

You, as an investor, can derive a number of important benefits from expanding the horizon of your portfolio beyond your home country: a far greater universe for stock selection, potentially greater returns, and an opportunity to reduce risk exposure. In addition, changes in currency relationships, while a double-edged sword, can enhance appreciation and offset part of the impact of price declines in foreign equity positions.

Broader stock selection

Global investment provides you with a much bigger pool of investment opportunities from which to choose. U.S. stocks accounted for only 36.2% of the world's total stock

market capitalization. Consequently, an investor who focuses solely on domestic issues will miss nearly two-thirds of the investment opportunities in the world.

Higher prospective returns

Global investing offers more opportunities for achieving higher returns. Non-U.S. stocks now account for more than half the value of all global equity securities. Recent financial studies show that investors who hold a blend of foreign and U.S. stocks receive higher returns --at lower risk -- than those who are fully invested in U.S. stocks.

Reduction of risk

Adding international investments to a portfolio of U.S. securities diversifies and reduces your risk. This reduction of risk will be enhanced because international investments are much less influenced by the U.S. economy, and the correlation to U.S. investments is much less. Foreign markets sometimes follow different cycles than the U.S. market, and from each other.

Although foreign stocks can be riskier than domestic issues, supplementing a domestic portfolio with a foreign component can actually reduce your portfolio's overall volatility. The reason is that by being diversified across many different economies which are at different points in the economic cycle, downturns in some markets may be offset by superior performance in others. There is considerable evidence that global diversification reduces systematic risk (*beta*) because of the relatively low correlations between returns on U.S. and foreign securities.

Figure 11.1 illustrates this, comparing the risk reduction through diversification within the United States to that obtainable through global diversification. A fully diversified U.S. portfolio is only 27% as risky as a typical individual stock, while a globally diversified portfolio appears to be about 12% as risky as a typical individual stock. This represents about 44% less than the U.S. figure.

Figure 11.2 demonstrates the effect over the past ten years. Notice how adding a small percentage of foreign stocks to a domestic portfolio actually decreased its overall risk while increasing the overall return. The lowest level of volatility came from a portfolio with about 30% foreign stocks and 70% U.S. stocks. And, in fact, a portfolio with 60% foreign holdings and only 40% U.S. holdings actually approximated the risk of a 100% domestic portfolio, yet the average annual return was over two percentage points greater.

Figure 11.1: Risk reduction through national and international diversification

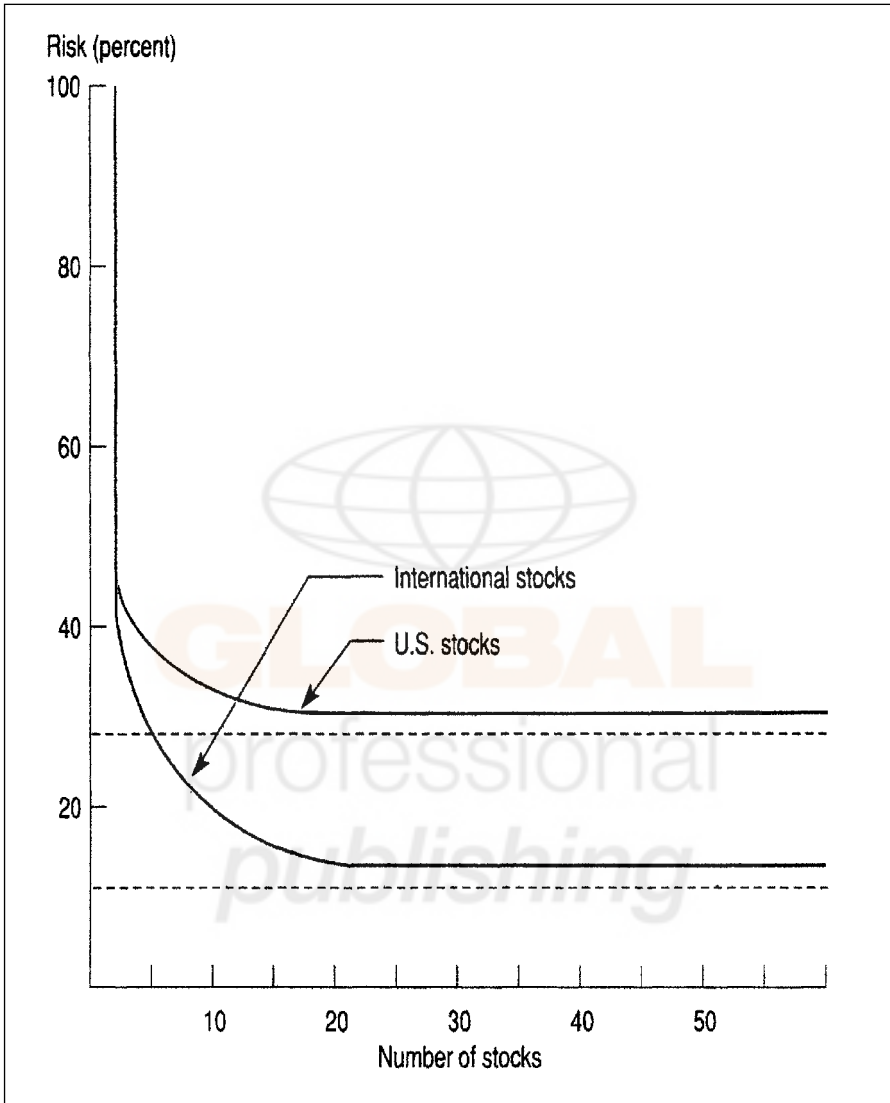
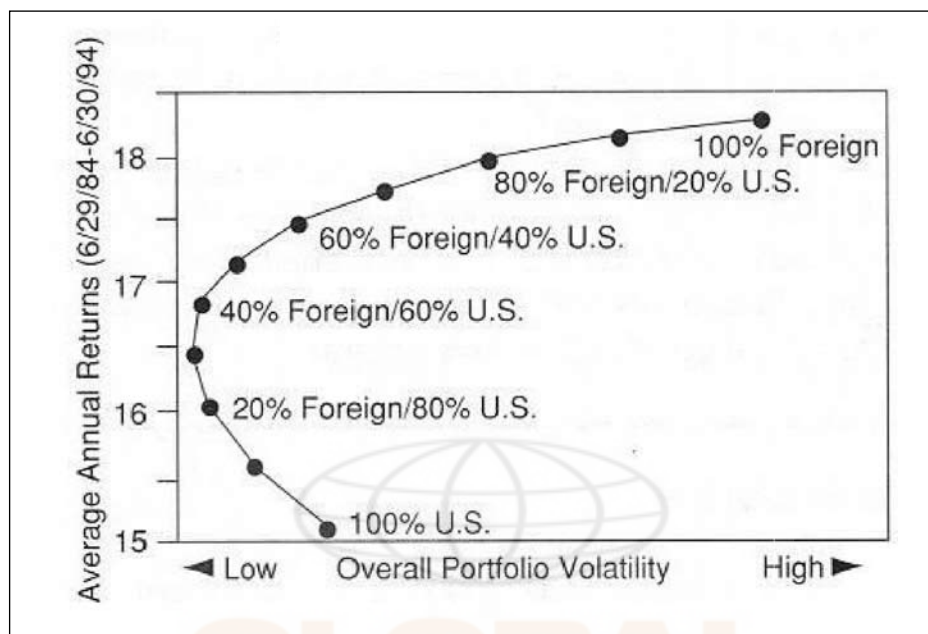


Figure 11.2: How foreign stocks have benefitted a domestic portfolio

What are the risks in investing globally?

The advantages of lower risk must be balanced against other risks associated with foreign securities. Risks that are inherent in international investing are: currency and political risks in addition to the risks of emerging markets, economies and companies.

Currency (or foreign exchange) risk

When you invest in a foreign market, the return on the foreign investment in terms of the U.S. dollar depends not only on the return on the foreign market in terms of local currency but also on the change in the exchange rate between the local currency and U.S. dollar. Since the exchange rates among major currencies have been volatile in recent years, exchange rate uncertainty has often been mentioned as one of the potential barriers to international investment.

For example, a strong dollar, meaning that foreign currency buys less dollars, would push down foreign returns of the U.S. investor. The following example illustrates how a change in the dollar affects the return on a foreign investment.

Example 1

You purchased bonds of a Japanese firm paying 12% interest. You will earn that rate, assuming interest is paid and in yens. What if you are paid in dollars? As Table 11.1

shows, you must then convert yens to dollars before the payout has any value to you. Suppose that the dollar appreciated 10% against the yen during the year after purchase. (A currency appreciates when acquiring one of its units requires more units of a foreign currency). In this example, 1 yen acquired .0084033 dollars, and later, 1 yen acquired only .0075757 dollars; at the new exchange rate it would take 1.101 (.0084033/.0075757) marks to acquire .0084033 dollars. Thus, the dollar has appreciated while the yen has depreciated. Now, your return realized in dollars is only 10.91%. The adverse movement in the foreign exchange rate--the dollar's appreciation--reduced your actual yield.

Table 11.1: Exchange risk and foreign investment yield

TRANSACTION	YENS	EXCHANGE RATE: NO. OF DOLLARS PER 1 YEN	DOLLARS
On 1/1/20A Purchased one Japanese bond with a 12% coupon rate	500	\$.0084033	\$4.20165
On 12/31/20A Expected interest received	60	.0084033	.504198
Expected yield	12%		12%
On 12/31/20A Actual interest received	60	.0076393*	.458358
Realized yield	12%		10.91%**

*\$.0084033 / (1+.1) = \$.0084033/1.1 = \$.0076393

**\$.458358/\$4.20165 = .1091 = 10.91%

Currency risks can be hedged by borrowing in the local currency or selling it forward. However, this type of tool is too costly and impractical for individual investors. *Note:* Choosing countries with strong currencies and investing in international mutual funds could be an answer to minimizing currency risk.

Note, however, that currency swings work both ways. A weak dollar would boost foreign returns of U.S. investors. Table 11.2 is a quick reference to judge how currency swings affect your foreign returns.

Table 11.2: Currency changes vs foreign returns in US dollars

CHANGE IN FOREIGN CURRENCY AGAINST THE DOLLAR						
FOREIGN RETURN	20%	10%	0%	-10%	-20%	
20%	44%	32	20	8	-4	
10	32	21	10	-1	-12	
0	20	10	0	-10	-20	
-10	8	-1	-10	-19	-28	
-20	-4	-12	-20	-28	-36	

Political (or sovereign) risk

Political or sovereign risk is viewed by many as a major obstacle to international investment. Clearly, political factors are a major determinant of the attractiveness for investment in any country. Countries viewed as likely candidates for internal political upheaval or with a pronounced trend toward elimination of the private sector will be unattractive to all investors, foreign and domestic alike. There is no reason to believe that local investors will be systematically optimistic regarding their country's future. When political risks increase significantly, such investors will attempt to diversify from the home market as rapidly as will foreigners. As a result, prices will fall until someone will be satisfied to hold the securities of a risky country.

In light of political risk, how risky are investments in foreign markets? There is, of course, no easy answer. Political instability, limited track records, poor statistics—they all make gauging risk a risky business. Several companies try to evaluate the risk in some of the countries that are receiving the most attention from foreign investors. Listed at the end of this chapter are sources of country risk information.

But if domestic investors are prevented from liquidating their domestic holdings or from purchasing foreign assets by national regulations or moral suasion, the market prices may not reflect generally shared views of the political situation. Of course, if foreign investors are constrained by the same regulations, then all investors lose. A careful evaluation of the relative flexibility of domestic and foreign investment, therefore, is a key element in determining whether political risks jeopardize cross-border holdings. The risk of currency controls is one of the few political risks that is borne primarily by foreign investors.

In some cases, political risks might even favor foreign investors relative to domestic investors because risks are domestic phenomena that can be diversified away globally. As a result, they will have a greater impact on the risk of a domestic investor whose portfolio is concentrated in home assets than an globally diversified investor. Accordingly, domestic shares might well be more attractive to foreign than domestic investors in periods of perceived high political uncertainty.

Institutional obstacles

A recurrent objection to global diversification is that the practical scope for foreign investing is limited. Many markets are perceived to be small, less liquid, and less efficient than those of the United States. Undoubtedly, there are many foreign stocks whose total capitalization and turnover are too limited for them to be of interest to most U.S. institutional investors. Further, in many markets - particularly the Japanese and West German - market capitalizations are often misleading indicators of an issue's marketability because a large proportion of the shares might be owned by banks, holding companies, or other concerns.

However, these considerations do not necessarily imply that these markets are less attractive to foreign institutional investors than to local investors. In fact, just the opposite might be the case. Domestic investors who depend primarily on their own market for liquidity and diversification are likely to be more constrained by these limitations than international investors who, through diversification, can virtually eliminate the nonmarket risk unique to individual companies even if they hold only a small number of shares in each market. International investors also do not have to rely on any single market for liquidity and, as a result, can take a longer view in regard to each market and security, even though they wish to realize profits within a reasonable period in each market and currency.

Another concern is related to the market efficiency of foreign markets. An efficient market is one where new information is quickly reflected in securities' prices and hence it is unlikely that any single investor will beat the market. Although less efficiency can be desirable from an active investment manager's perspective because it implies that superior performance is possible, it also puts the international investor at a disadvantage relative to the domestic investor, who has greater knowledge and better information. Studies of foreign markets suggest that they generally can be considered to be efficient in the sense that prices adjust rapidly to new information and that most professional managers are unable to consistently outperform the market.

There are several institutional obstacles that can make international investing costly, undesirable, or, in some cases, impossible. They include formal barriers to international transactions, such as exchange controls, double taxation of portfolio income for certain investors in particular countries, and restrictions on ownership of securities according to the nationality of the investor. These obstacles also include informal barriers, such as the difficulty of obtaining information about a market, differences in reporting practices that make international comparisons difficult, and subtle impediments to foreign investment based on traditional practice.

A major implication of the existence of such obstacles is that even if one assumes an integrated, efficient world capital market, investors with different legal domiciles or tax situations might want to hold different investments. However, it is difficult to

determine by how much such portfolios should differ from the world optimal market portfolio in the absence of such obstacles. This would depend on the balancing of the effect of the obstacles against the gains from more complete diversification.

What are the ways to invest globally?

The advantages of international investing can be reaped from participation in international money and capital markets, direct or indirect.

Purchasing foreign stock directly

A U.S. investor can place an order to purchase foreign securities through a U.S. brokerage firm, which will instruct its respective branch office or a local broker to buy the stock. One advantage of owning ordinary shares is a much larger selection of foreign stocks from which to choose. Also, trading is usually more active, resulting in greater liquidity.

The direct purchase of foreign securities suffer from the following difficulties:

1. It involves high transaction costs in terms of brokerage commissions and additional costs associated with the international clearing process.
2. It involves a lot of information and research costs. Further, the information is often difficult to obtain and its reliability is questionable.
3. An investor must be familiar with the financial reporting and disclosure standards of the country in which the stock is issued.
4. When owning foreign shares, U.S. investors are subject to the rules and regulations of the foreign stock exchanges. Moreover, delays in settlement can occur.

How may your account be handled?

Like domestic stock purchases, the foreign stock purchased may be registered in your name or it may be registered in "Street" name - the name of the broker who initiates the transaction. In the former case, however, you must arrange to open custodian accounts at banks in the countries in which you plan to buy securities. This process can be simplified by opening a global custody account with a multinational commercial bank. This type of account enables you to utilize the foreign subsidiaries of a single institution for the safekeeping of all securities rather than having to establish accounts at separate banks around the world. Many U.S. brokers also establish their own global custody accounts overseas to act as receiving and delivery agents.

Many foreign nations impose a withholding tax on dividends, though these taxes vary from country to country. U.S. investors can file for a refund on this tax if tax treaties exist between the U.S. and the other nation involved. Most foreign shares can be held in either registered or bearer form, though in some countries foreign investors may only

own stock in bearer form. If the shares are registered, the investor will receive dividends in local currency (less withholding taxes) and notices from the company in the local language. If the securities are held in bearer form, the investor can receive dividends (after deduction of withholding taxes) in U.S. dollars through the agent bank.

The following example illustrates how to determine a rough price for foreign securities in U.S. dollars. This illustration is based on hypothetical numbers.

Example 2

The foreign exchange rates quoted in newspapers are interbank rates. As a rule of thumb, we add 2% to the interbank rate to determine the rate for stock transactions. To determine a rough price for foreign securities in U.S. dollars, you must multiply the price by the applicable exchange rate. For example, in Table 11.3, in the case of Ajinomoto closing at 1,020 yen, we note that for the Japanese yen, the exchange rate is \$.011204 (assumed). Two percent added to this gives you an estimated exchange rate of \$.011428 (\$.011204 + .000224).

If you multiply the price of the stock in foreign currency by the approximate U.S. equivalent of yen, you obtain a rough per-share price of the stock in U.S. dollars.

1,020	Yen (price of stock)
<u>X \$.011428</u>	U.S.\$ (rough exchange value of \$1)
<u>\$11.6566</u>	U.S.\$ (price of stock in U.S. dollars)

Table 11.3: Foreign securities quotations

CLOSING PRICES		
JAPAN (JAPANESE YEN)		
	<i>Cur.</i>	<i>Prev.</i>
Ajinomto	1020	1040
Alps	971	1000
Amada	855	900
Anitsu	1030	1030
Asahi Chem	600	614
Asahi Glas	1050	1050
Bank of Tokyo	1300	1340
Banyu	920	949
Bridgestone	1300	1310
Brother	472	504

In recent years, there have been an increasing trend of the shares of many firms being listed on foreign exchanges. This cross-listing is usually accomplished by depository receipts.

American Depository Receipts (ADRs)

American Depository Receipts, or ADRs, are certificates that represent stock in foreign companies. The process of ADRs works as follows: a foreign company places shares in trust with a U.S. bank, which in turn issues depository receipts to U.S. investors. The ADRs, then are claims to shares of stock, and are essentially the same as shares. The depository bank performs all clerical functions –issuing annual reports, keeping a shareholder ledger, paying and maintaining dividend records, and what not–allowing the ADRs to trade in markets just like domestic securities trade. ADRs are traded on the NYSE, AMEX, and OTC markets as a share in stock, minus the voting rights. Examples of ADRs are China Life Insurance and Fiat.

ADRs have become an increasingly convenient and popular vehicle for investing internationally. Investors do not have to go through foreign brokers and information on company operations is usually available in English. Therefore, ADRs are good substitutes for direct foreign investment. They are bought and sold with U.S. dollars and pay their dividends in dollars. Further, the trading and settlement costs are waived that apply in some foreign markets. The certificates are issued by depository banks (for example, the Bank of New York). To purchase ADRs, contact your stockbroker or call Bank of New York, which is the largest seller of ADRs, at (212) 815-2000.

Disadvantages of ADRs

ADRs, however, are not for everyone. Disadvantages are the following:

1. ADRs carry an element of currency risk. For example, an ADR based on the stock of a British company would tend to lose in value when the dollar strengthens against the British pound, if other factors were held constant. This is because as the pound weakens, less U.S. dollars are required to buy the same shares of a U.K. company.
2. Some thinly traded ADRs can be harder to buy and sell. This could make them more expensive to purchase than the quoted price.
3. You may face problems obtaining reliable information on the foreign companies. It may be difficult to do your own research in selecting foreign stocks. For one thing, there is a shortage of data: the annual report may be all that is available, and its reliability is questionable. Furthermore, in many instances, foreign financial reporting and accounting standards are substantially different from those accepted in the U.S.

4. ADRs can be either sponsored or unsponsored. Many ADRs are not sponsored by the underlying companies. Non-sponsored ADRs oblige you to pay certain fees to the depository bank. The return is reduced accordingly.
5. There are still a limited number of issues available - for only a small fraction of the foreign stocks traded internationally. More than 2,000 foreign companies provide this option for U.S. and Canadian investors interested in buying shares. Many interesting and rewarding investment opportunities exist in shares with no ADRs.

Buying foreign bonds

All international bonds fall within two generic classifications, Eurobonds and foreign bonds. The distinction between categories is based on whether the borrower is a domestic or a foreign resident, and whether the issue is denominated in the local currency or a foreign currency.

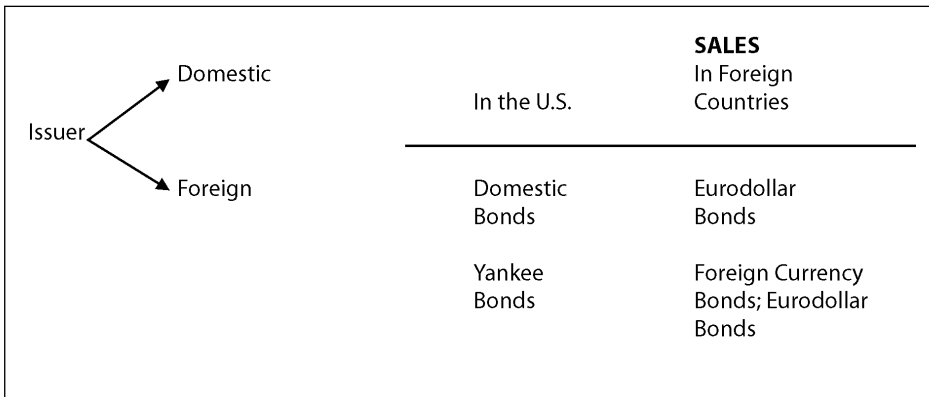
What is the difference between a eurobond and a foreign bond?

A *Eurobond* is underwritten by an international syndicate of banks and other securities firms, and is sold exclusively in countries other than the country in whose currency the issue is denominated. For example, a bond issued by a U.S. corporation, denominated in U.S. dollars, but sold to investors in Europe and Japan (not to investors in the United States), would be a Eurobond. Eurobonds are issued by multinational corporations, large domestic corporations, sovereign governments, governmental enterprises, and international institutions. They are offered simultaneously in a number of different national capital markets, but not in the capital market of the country, nor to residents of the country, in whose currency the bond is denominated. Almost all Eurobonds are in bearer form with call provisions and sinking funds.

A *foreign bond* is underwritten by a syndicate composed of members from a single country, sold principally within that country, and denominated in the currency of that country. The issuer, however, is from another country. A bond issued by a Swedish corporation, denominated in dollars, and sold in the U.S. to U.S. investors by U.S. investment bankers, would be a foreign bond. Foreign bonds have nicknames: foreign bonds sold in the U.S. are "Yankee bonds"; those sold in Japan are "Samurai bonds"; and foreign bonds sold in the United Kingdom are "Bulldogs."

Figure 11.3 specifically reclassifies foreign bonds from a U.S. investor's perspective.

Figure 11.3: Foreign bonds to U.S. investors



Foreign currency bonds are issued by foreign governments and foreign corporations, denominated in their own currency. As with domestic bonds, such bonds are priced inversely to movements in the interest rate of the country in whose currency the issue is denominated. For example, the values of German bonds fall if German interest rates rise. In addition, values of bonds denominated in foreign currencies will fall (or rise) if the dollar appreciates (or depreciates) relative to the denominated currency. Indeed, investing in foreign currency bonds is really a play on the dollar. If the dollar and foreign interest rates fall, investors in foreign currency bonds could make a nice return. It should be pointed out, however, that if both the dollar and foreign interest rates rise, the investors will be hit with a double whammy.

What are the advantages of foreign convertibles?

In addition to participation in the appreciation of overseas stocks, foreign convertibles enable investors to earn greater current returns while incurring less risk compared with the underlying common stocks. Their yields are usually higher than those provided by the dividends of the underlying common stocks. Moreover, the conversion premium (the difference between the cost of acquiring the underlying stock through the conversion provisions of the bond and the current share price) on these bonds is normally quite low, allowing an investor to pick up this yield advantage at a relatively low cost. Most Japanese convertibles are issued with 5% premiums, for example.

Because of their hybrid nature, convertible bonds have less downside risk than the underlying common - i.e., the fixed coupon provides a price floor determined by the yields available on comparable straight debt issues. Also, convertible securities are senior to common stocks. In the event of bankruptcy, holders of convertible securities

have priority over stockholders in claiming the assets of a firm. And coupon payments on Euroconvertibles are not subject to withholding taxes, while the dividend payments on the common stocks usually are.

What does the yield depend on?

The yield on a foreign bond, for a U.S. investor, will depend on both the local bond market of the issuing company and how the currency in which the bond is denominated appreciates (depreciates) against the U.S. dollar. International bond funds would be an excellent route as they provide diversification benefits since there is a low correlation between the returns of U.S. government bonds and those of most major foreign bond markets.

Investing in international money markets

A market for short-term financial claims performs the essential service of enabling financial investment to be transformed into real investment. A well-developed money market is able to attract savings and channel them to their most efficient uses, making funds more cheaply and freely available to the business sector. Every country that has banks which accept short-term deposits (time deposits) has a money market of sorts. As the economy grows, there would appear a demand for a wider range of financial instruments, such as commercial paper, acceptances, and government securities, and these would be traded in a secondary market where financial claims could be freely bought and sold. As the economy becomes open through international transactions, the national money market became linked to international money markets just as the national capital market has its linkages with international capital markets.

What are the ways of investing in international money markets?

There are three major ways of investing in international money markets. The first approach is to purchase foreign short-term money market instruments directly. By investing in foreign money market assets denominated in the foreign currency, the full impact of currency variation is reflected in returns along with the yield of the money market investments. If, for example, interest rates are higher in England and a U.S. investor thinks sterling will strengthen or remain on the same exchange rate with the dollar, then an investment denominated in the sterling currency would make sense.

The second approach would be through the Eurocurrency market where funds are intermediated outside the country of the currency in which the funds are

denominated. Thus, the Eurocurrency market comprises financial institutions that compete for dollar time deposits and make dollar loans outside the United States, for example. An example of Eurocurrency markets would be that a U.S. investor purchases Eurodollar CDs from a bank in London.

Eurocurrency banking is not subject to domestic banking regulation, such as reserve requirements and interest-rate restrictions. This enables Eurobanks to operate more efficiently, cheaply and competitively than their domestic counterparts and to offer slightly better terms to both borrowers and lenders. Therefore Eurodollar deposit rates are somewhat higher, and effective lending rates a little lower, than they are in the U.S. money market.

The third approach is to place foreign currency deposits with U.S. banks in the United States. This enables U.S. investors to conveniently take advantage of the expected weakness of the dollar relative to the currency in which the deposit is denominated.

Buying shares of U.S.-based multinational corporations



Many investors achieve a reasonable degree of global diversification without recognizing it because many U.S. firms are multinational corporations (MNCs). Companies such as IBM, Coca Cola, and General Motors do a considerable portion of their business outside the U.S. Further, buying shares of MNCs not only achieve global diversification, but also avoid high transaction costs and information problems faced by investors directly purchasing foreign securities.

A MNC owns, controls and manages income - generating assets in a variety of countries. Thus a MNC can be viewed as representing a portfolio of globally diversified cash flows originated in different countries and currencies. Since the cash flows of a MNC are likely to be strongly influenced by foreign factors, it has been suggested that global diversification may be able to be achieved indirectly in the shares of MNCs.

However, several studies have found that the share price behavior of MNCs is nearly indistinguishable from that of purely domestic firms. The share prices of MNCs show far more sensitivity to the index of their home markets than to foreign market indices. Thus, investing in domestic MNCs would not be an effective means of global diversification, though it would be one of the cheapest and the most convenient means.

Investing in international mutual funds

Mutual funds may be more attractive because they offer the services of full-time professional managers, safekeeping of securities, the chance to invest in terms of dollar

amounts (as funds offer both full and fractional shares), and the ability to reduce the amount invested without reducing diversity. Coupled with such benefits, there has been a significant increase in international mutual funds as more investors are diversifying globally. The next section is devoted to this subject.

Global portfolio diversification via mutual funds

International mutual funds are probably the best way to achieve global diversification, either on a broad basis or by targeting specific countries or geographical regions. It is a relatively easy, low cost way, and takes a lot of different factors out of investing in foreign securities.

In general, mutual funds are classified as stock funds, bond funds, and money market funds, based on the securities invested. Thus, global and international funds are made up of all of the above three, though international money market funds are a relatively recent development.

What are the features of the various types of international funds?

Global and international stock funds

In terms of geographical diversity, international stock funds can be divided into four groups, ranging from highly diversified to highly focused: global, international, regional, and single-country funds.

Global funds can invest anywhere in the world, including the United States. However, most global funds keep the majority of their assets in foreign markets. Global funds are worth considering if you are unsure about how much to allocate to foreign markets, though this is somewhat of a cop-out in that the fund's foreign allocation is not based on the specific circumstances of any single investor.

International (or foreign) funds invest only in foreign stocks. Because these funds focus only on foreign markets, they allow investors to control what portion of their personal portfolio they want to allocate to non-U.S. stocks.

International funds with a *regional focus* allow investors to narrow their sights on a particular region. There are a number of European funds, Asian-Pacific, and Latin American funds. Most regional funds are closed-end funds, although there are some open-end regional funds. International index funds are being introduced, such as Vanguard's.

Single-country funds are the most focused and therefore by far the most aggressive foreign stock funds. Almost all single-country funds are closed-end funds (exceptions

are the Japan Fund and French Fund). This exaggerates their aggressiveness because single-country (and regional) closed-end funds have been known to sell at both large discounts and premiums to their net asset value. Thus, closed-end single-country funds are well suited for only the most sophisticated investors who are confident in their ability to assess the potential for a specific market as well as the trends in the fund's stock price versus its net asset value. *Note:* Because of their broad focus, global and international funds are less risky and therefore a better choice for the average investor than a single country or a regional fund.

International bond funds

Compared with international stock funds, international bond funds are limited in the number of available funds as well as in the performance history. In selecting international bond funds, consider the following factors: open-end vs. closed-end, average maturity, country focus, and currency risk. It is often suggested that you should stay short-term (typically, four years or less) and locate a fund that *hedges* some of the foreign exchange risk and invests in countries with currencies that move with the U.S. dollar.

International money market funds

International money market funds are a relatively recent phenomenon. Many funds invest only in dollar-denominated foreign money market instruments, thereby eliminating the currency risk. If you are a currency risk-averse investor, you should put your money in international money market funds.

Hedged funds

In order to minimize an exposure to currency risk, many funds try to hedge. It is a matter of degree. In general, international short-term bond funds usually hedge most of the currency risk while longer-term funds have substantial exposure. Funds use currency options, futures, and elaborate cross currency hedges, but the most effective hedges are expensive.

How do you select mutual funds?

In evaluating a mutual fund, domestic or foreign, you should look at the objectives of the fund, the fund's management and track record, the fund's expense ratio, and so on. It is important to note that when considering any mutual fund, you should realize that a big part of what you are buying is management. Therefore, continuity of management is important, as evidenced by consistent track records for at least five years.

The performance of foreign mutual funds must be measured against their peers and the correct market benchmarks. For example, a broadly diversified international

fund should be compared with the EAFE index. On the other hand, the Japanese funds should be judged against each other as well as with the Nikkei average.

With closed-end funds, a well-diversified, multi-country fund that sells at a discount should be sought. But if you buy at a premium, make sure that it is at least the low-end of its range. Another fact to consider is: the fund's expense ratio relative to other comparable funds and relative to its premium or discount level.

Exchange-traded funds

Exchange-traded funds (ETFs) are an inexpensive way to target foreign stocks. An ETF is a security, not a mutual fund, that tracks an index, a commodity or a basket of assets like an index fund, but trades like a stock on an exchange, thus experiencing price changes throughout the day as it is bought and sold. For example, iShares MSCI EAFE Index Fund (EFA), which tracks a widely followed Morgan Stanley Capital International index, includes 1,000 stocks in markets outside of the U.S. About 20% of the fund's exposure is in Japan, a market that some say looks relatively inexpensive. Another example is the Dow Jones Stoxx 50 ETF (FEU), which tracks the performance of the Dow Jones STOXX 50 Index of European blue-chip stocks.

Sources of information

Country risk

Euromoney magazine's annual *Country Risk Rating*, which is based on a measure of different countries' access to international credit, trade finance, political risk, and a country's payment record. The rankings are generally confirmed by political risk insurers and top syndicate managers in the Euromarkets.

Rating by *Economist Intelligence Unit*, a New York-based subsidiary of the *Economist Group*, London, which is based on such factors as external debt and trends in the current account, the consistency of the government policy, foreign-exchange reserves, and the quality of economic management.

International Country Risk Guide, published by a U.S. division of *International Business Communications*, Ltd., London, which offers a composite risk rating, as well as individual ratings for political, financial, and economic risk. The political variable - which makes up half of the composite index - includes factors such as government corruption and how economic expectations diverge from reality. The financial rating looks at such things as the likelihood of losses from exchange controls and loan defaults. Finally, economic ratings consider such factors as inflation and debt-service costs.

Data Book (quarterly), published by Thompson BankWatch, Inc., 61 Broadway, New York, NY 10006 provides a Thompson country rating assessing overall political and economic stability of a country in which a bank is domiciled.

Foreign firms

The following is a list of sources that provides addresses, phone number, area of business, officers, directors, and financial data:

Moody's International Manual, published by Moody's Investment Service annually in two volumes with weekly updating.

International Directory of Corporate Affiliations, published twice a year by National Register Publishing Co.

The International Corporate 1000, published by Monitor Publishing Co. with annual updating.



GLOBAL
professional
publishing

Tax -Advantaged Investments



Many investments have specific tax benefits. Therefore, they can be excellent investment vehicles for retirement planning. They include limited partnerships, various retirement plans, such as Individual Retirement Accounts (IRAs), and annuities. You will learn the pros and cons of each in this chapter.

What are the related tax rules and applications?

The following are some of the most important tax rules related to investments:

1. Three categories of income exist for federal income tax purposes: (1) active income, (2) passive income, and (3) portfolio income. Most investment income, other than real estate and limited partnership interests, falls into the portfolio income category. Portfolio income consists of investment income, such as interest, dividends, and capital gains and losses.
2. Qualified dividends and most net capital gains are taxed at a maximum rate of 15 percent through tax year 2010. A net capital gain is the excess of a net long-term capital gain over any net short-term capital loss. A maximum rate of 25 percent applies to the recapture of depreciation on real estate (unrecaptured Code Sec. 1250 gain). A long-term capital gain on the sale or exchange of certain collectibles is subject to a maximum tax rate of 28 percent.

3. The expenses associated with investment income are generally deductible under Code Sec. 212. Investment expenses related to portfolio income, except for interest expense, are miscellaneous itemized deductions, which in the aggregate are subject to a reduction for two percent of the taxpayer's adjusted gross income. Miscellaneous itemized deductions are not allowed in calculating alternative minimum taxable income. Investment interest expense is an itemized deduction that is not subject to a reduction based on the taxpayer's adjusted gross income. However, investment interest expense is limited to net investment income. For this purpose, investment income does not include a taxpayer's qualified dividends or long-term capital gains unless the taxpayer elects to have them taxed at the regular tax rate. A taxpayer may carry forward indefinitely any interest expense over the current year's investment income. Interest expense on loans used to purchase municipal bonds is not deductible.
4. Expenses for rental and royalty income are deductible in calculating adjusted gross income. Income or loss from a rental activity is passive income or passive activity loss. In general, a taxpayer may deduct passive activity losses only against passive income. The taxpayer may carry forward any unused passive activity loss to the next tax year to offset any passive income in the next year. When a taxpayer completely disposes of a passive activity in a taxable transaction, the taxpayer may deduct any suspended passive activity losses.
5. For rental real estate in which the taxpayer actively participates, the taxpayer may deduct a loss of up to \$25,000 against other income. This maximum deduction is phased out by 50 percent of the taxpayer's modified adjusted gross income over \$100,000. Therefore, the deduction is fully phased out once the taxpayer's modified adjusted gross income reaches \$150,000. The standard for active participation is lower than the standard for material participation. The law does not treat the taxpayer as actively participating in any limited partnership interest in real estate.
6. A capital gain or loss results from the sale or exchange of a capital asset. If the taxpayer held the asset for more than one year, the capital gain or loss will be a long-term capital gain or loss. If the taxpayer held the asset for one year or less, the capital gain or loss will be a short-term capital gain or loss. The taxpayer combines all short-term capital gains and all short-term capital losses to arrive at the net short-term capital gain. The taxpayer combines the long-term capital gains and losses to calculate the net long-term capital gain or loss. If the taxpayer has a net long-term capital gain, the taxpayer subtracts any net short-term capital loss. The difference is a net capital gain. Net short-term capital gains in excess of any net long-term capital loss are

taxed at the same rate as ordinary income.

7. If the taxpayer has a loss after combining the net short-term capital gain or loss and the net long-term capital gain or loss, the loss is called a net capital loss. The taxpayer may deduct a net capital loss up to \$3,000 per year against ordinary income. The taxpayer carries any remaining net capital loss forward indefinitely until the taxpayer uses all of the loss.
8. The law requires the taxpayer to treat securities as sold on the trade date, not on the settlement date. Therefore, gains on the sales of securities on an exchange are not eligible for installment sale treatment.
9. If a taxpayer sells stock or securities at a loss and within 30 days either side of the trade date the taxpayer purchased the same or substantially identical stock or securities, the sale resulting in the loss is called a wash sale. A loss on a wash sale is not recognized. The taxpayer adds the disallowed loss to the basis of the new stock or securities purchased that caused the wash sale rule to apply. If the taxpayer purchases fewer shares of the same stock that the taxpayer sold, the taxpayer recognizes the loss on the number of shares that the taxpayer did not purchase within 30 days either side of the sale resulting in the loss. If the taxpayer purchases more shares than the number of shares that resulted in the loss, the taxpayer does not recognize the loss. However, the disallowed loss adds to the basis of only the same number of shares sold that resulted in the loss.
10. Under prior law, one way to defer a capital gain on stock into the next tax year was to sell the stock short against the box. The taxpayer sold short the same stock the taxpayer owned. In the next tax year, the taxpayer delivered the stock to close the short sale and recognize the gain in that year. However, Code Sec. 1259 states that if a taxpayer makes a constructive sale of an appreciated financial position, the taxpayer must recognize the gain in the year of the constructive sale. The taxpayer is deemed to have sold the appreciated financial position for its fair market value and then repurchased it. Therefore, selling stock short against the box is no longer a viable tax planning technique. In addition, the low tax rates on net capital gains make the realization of long-term capital gains less taxing than in prior years.

What tax advantage is there to real estate?

Tax relief comes with real estate because the investor can deduct expenses, mortgage interest, and depreciation. Three major types of real estate investments are: limited partnerships, real estate investment trusts (REITs), and real estate operating companies (REOCs). Tax relief comes with real estate because the investor may deduct expenses, mortgage interest, and depreciation.

What are limited partnerships?

Limited partnerships, now usually referred to as direct investments or private investments, are an investment strategy used for tax benefits. They include real estate partnerships, oil and gas partnerships, equipment leasing partnerships, and cable partnerships. For example, investing in real estate partnerships enables investors to buy into real estate projects too costly for one investor. A group of investors is set up, each investing money to buy a large project like a shopping mall or an apartment house. There are both general and limited partners. The general manager typically originates and manages the property for compensation. The limited partners invest money and are liable just for that investment. Limited partnerships offer the following benefits:

- ▶ Tax deductible expenses.
- ▶ Professional management.
- ▶ Exemption from the double taxation of distributions faced by a corporate structure. A limited partnership functions as a pass-through entity, so it does not have to pay taxes on the income it receives.

The disadvantages are as follows:

1. The tax law does not allow passive activity losses to be deducted, except from passive income.
2. High management charges and costs (typically, 15 to 30 percent).
3. High risk.
4. Illiquidity from a lack of secondary market, unlike, for example, REITs. This means you would be likely to lose money if you wish to sell your interest before the limited partnership liquidates its assets. Note: In recent years, a new securities market has emerged—the limited partnership secondary market. This new market offers a long-term benefit to limited partnership investors. Secondary market liquidity softens what has perhaps been the principal negative aspect of limited partnership investing—the long-term illiquid nature of the security.

Information on the limited partnership secondary market includes:

Partnership Profiles (www.partnershipprofiles.com; (800) 634-4614) provides quarterly research reports on actively traded partnerships. In addition, the *Partnership Spectrum Newsletter* carries news and analysis of the partnership market including secondary market trading prices.

Oil and gas programs. Two basic types of limited partnerships exist for oil and gas investments:

1. Drilling programs—exploratory (wildcatting) drilling in an unproven area and development drilling in or near proven fields.

2. Income programs—acquiring producing properties.

Oil and gas programs have the chance to deduct “intangible drilling costs” and a “depletion allowance” reflecting the using up of estimated reserves.

- ▶ Recapture rules. Depreciation and intangible drilling costs are subject to recapture upon the sale of the property.
- ▶ Alternative minimum tax (AMT). If an investor relies on “tax preference~ items to reduce his or her regular tax liability excessively, the alternative computation adds back the preference items to the investor’s taxable income, and a 26-percent tax rate is applied to the first \$175,000 of the alternative minimum taxable income in excess of the exemption amount and a tax rate of 28 percent applies to the amount over \$175,000. In 2009, the AMT exemption amount has increased to \$46,700 (\$70,950 if married filing jointly or qualifying widow(er); \$35,475 if married filing separately).

What are real estate investment trusts (REITs)?

A REIT is another form of real estate investing. REITs are companies similar to *closed-end mutual funds*. REITs invest money in diversified real estate or mortgage portfolios rather than stocks or bonds. REITs are traded on the stock exchanges and the over-the-counter market.

To continue its tax exempt status, a REIT must distribute 85 percent of its ordinary income and 95 percent of its capital gain net income to shareholders. If a REIT fails to do so, it is subject to a four percent excise tax under Code Sec. 4981. REITs are exempt from corporate taxes on income or gains.

Are REIT yields attractive? Yields might be high because there is no corporate tax on earnings, so it all flows to shareholders.

Kinds of REITs. Three types of REITs exist: Equity REITs concentrate on income producing properties; mortgage REITs lend to developers and builders; hybrid REITs do both. Equity REITs are the safest; but, their total returns are the lowest of the three types of REITs.

Are REITs for you? You may determine the suitability of REITs for your investment objectives by considering the following factors.

- ▶ How to purchase: Contact a stockbroker.
- ▶ Advantages:
 - Capital appreciation potential.
 - Liquid investment relative to other real estate investments.
 - Diversification in real estate projects with smaller cash investment.

- Portfolio diversification effects since REITs generally behave differently from stocks and bonds.
- ▶ Disadvantages: Risk of loss in declining real estate market.
- ▶ Liquidity: Because shares are traded on a stock exchange, they may be sold.
- ▶ Taxes: Tax on capital gains and dividends.

Note: Low correlation with the stock and bond markets make REITs a compelling opportunity for investors seeking portfolio diversification, as shown below. Adding REITs to a diversified portfolio may provide better risk-adjusted returns.

REITs Correlation with Indexes for 10 Years Ended 1/30/2009

Russell 2000 Index	0.44
S&P 500 Index	0.25
Merrill Lynch Government/Corporate Bond Index	0.05

Choosing an REIT

Before investing in an REIT, review the current annual report, *SNL Real Estate Securities Weekly* (www.snl.com/real_estate) or *Realty Stock Review* (www.realtystock.com).

Consider:

- ▶ Profitability, measured by net income before gains or losses on real estate.
- ▶ Dividend per share and history.
- ▶ Cash available for distribution (CAD) per share.
- ▶ Annual cash flow measured by funds from operations (FFO) per share.
- ▶ Condition of properties.
- ▶ Location of properties, good or bad areas.
- ▶ Nature of property (e.g., residential or commercial).
- ▶ Degree of leverage.
- ▶ Years REIT has been in existence.

Note: Earnings estimates on REITs are posted to *Thompson/First Call* based on the basis of net income before gains or losses on real estate and also in FFOs.

Sources of information for REITs

Since REITs are traded on the national exchanges, contact information and financial data can be obtained through many of the same sources you would use for listed stocks, such as *S&P's Stock Guide* and *Value Line Investment Surveys*. *Moody's Bank and Finance Manual*, published annually with twice weekly supplement by Moody's

Investment Service and also available on CD, covers 109 REITs, giving detailed financial information. For a list of current REITs, contact *National Association of Real Estate Investment Trusts* (www.nareit.com) at (202) 739-9400.

Also, visit SNL Financials website (www.snl.com/real_estate) for detailed information on the nation's REITs and real estate operating companies (REOCs).

What is a real estate operating company (REOC)?

Real estate operating companies (REOCs) are publicly traded real estate companies that have chosen not to be taxed as REITs. The three primary reasons for such a choice are (1) the availability of tax-loss carry-forwards, (2) operation in non-REIT-qualifying lines of business, and (3) the ability to retain earnings. In the first instance, an REOC may be indistinguishable from an REIT in all except tax status. In the second, an REOC may be involved, for example, in the operation of hotels, a line of business that generates taxable revenue. In the third case, a real estate company may decide that greater growth is available through reinvestment of earnings rather than by paying out dividends and hoping that its stock price remains high enough to use as acquisition currency.

What are the tax implications of retirement plans?

Retirement plans are either "tax qualified" or "non-tax qualified." Tax qualified plan contributions are deductible from the contributor's gross income. Earnings in the plan build up tax deferred. When a taxpayer receives distributions from the plan, the entire distribution is taxable at that time.

Non-tax qualified plan contributions are not deductible from the contributor's gross income. Earnings in the plan build up tax deferred. When a taxpayer receives distributions from the plan, the portion of the distribution that represents earnings is taxable.

Tax-deferred investments are important parts of any retirement planning effort. A key to this is that earnings, including dividends and capital gains, will compound tax deferred until they are distributed. To see how tax-deferred growth can make a significant difference over the years, consider the following example.

Example 1

Assume that you will earn an eight-percent return on your investment annually and that your current income tax rate is 15 percent, while you will be taxed at a 31-percent rate 30 years from now when you retire. If you make annual tax-deferred

contributions of \$3,000 for 30 years at the end of each year (such as to an IRA account), you could build a nest egg of \$339,850, while the same investment in a taxable account may produce \$273,387.

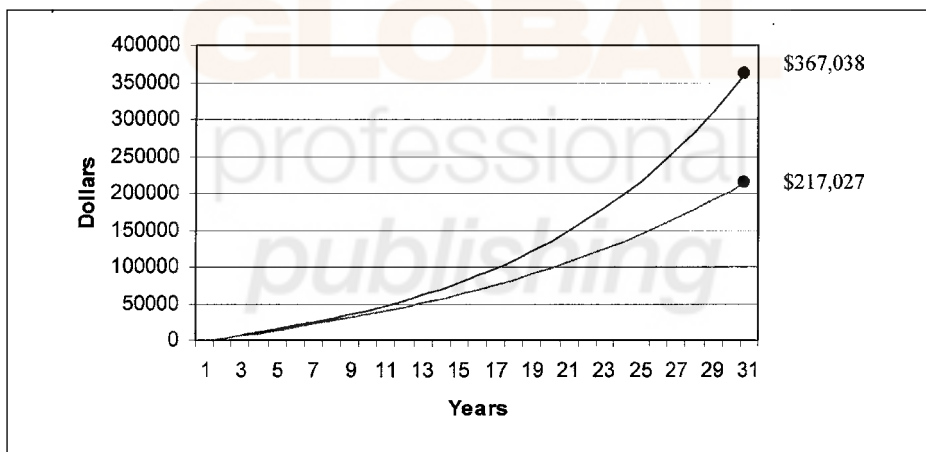
Keeping your eye on retirement

When you retire, how much you will have depends on such factors as interest rates and switching funds around for the best return. The following example illustrates the power of tax-deferred compounding.

Example 2

Assume a \$3,000 annual investment at the beginning of each year for 30 years, an eight-percent fixed return, and a 35 percent tax bracket. Then, the after-tax dollar amount of the tax-deferred investment upon withdrawal at retirement at the end of 30 years (assuming that contributions were not deductible) would be \$367,038, while taxable investment would grow only to \$217,027, as shown in Figure 12.1.

Figure 12.1: The power of tax-deferred growth



A couple of percentage points mean a lot. Assume a \$50,000 tax-free pension fund earning four percent. It will be \$162,150 ($\$50,000 \times 3.243$) after 30 years. The same amount invested at six percent will give you \$287,200 ($\$50,000 \times 5.744$) after 30 years.

Example 3

\$10,000 invested at 10%, 12%, or 14%, after 30 years:

	10%	12%	14%
Amount invested	\$10,000	\$10,000	\$10,000
Future value of \$1 (Table 6.1 = T1 in Chapter 6)	<u>17.450</u>	<u>29.960</u>	<u>50.950</u>
Compound amount after 30 years	\$174,500	\$299,600	\$509,500

Even if your pension is professionally managed, you may select different investments based on rate of return and risk. You may apportion your savings, with the privilege of periodic switching from stocks to bonds, for example.

What interest rate are you earning? The interest rate should exceed the inflation rate. Compound tax-deferred interest will make your pension grow.

What are types of pension funds?

Company-sponsored pension plans

Qualified company retirement plans. The IRS allows a company to contribute to a pension plan that is qualified. Qualified is defined as satisfying certain criteria so that contributions are tax deductible. Investment income accumulates on a tax-deferred basis.

Profit-sharing plans. A profit sharing plan is a type of defined contribution plan. It is different from other qualified plans, because you need not retire to obtain payments.

Note: Because contributions are made only if there is profit, there is uncertainty as to the amount of retirement benefit.

401(k) salary reduction plans. A 401(k) plan postpones part of your salary until you retire. Each salary payment is lower. Employers often match a percentage of an employee's contributions (50-percent matches are common at many companies). With a 401(k), you can put away up to the amount shown in Figure 12.2 tax deferred each year. Interest accumulates tax-deferred until you retire. The tax-deferred compounding effect enhances your retirement savings.

Example 4

You save 15 percent of your \$60,000 annual salary in a 401(k) plan. Assume that the marginal tax rate is 25 percent. See how you fare with a 401(k) plan and without one.

	TAKE-HOME PAY	
	WITH 401 (K) PLAN	WITHOUT 401 (K) PLAN
Base pay	\$60,000	\$60,000
Salary reduction	9,000	None
Taxable income	\$51,000	\$60,000
Federal and FICA taxes	12,750	15,000
Savings after taxes	None	9,000
Take-home pay	\$38,250	\$36,000

Incremental take-home pay under plan = \$2,250 ($\$9,000 \times 25\%$).

Tax-sheltered annuities (TSA). This applies if you work for a non-profit entity. A TSA is also known as a 403(b) plan, and it is similar to a 401(k) plan. The withdrawals are subject to ordinary tax rates.

Employee stock ownership plans (ESOP). A stock-bonus plan in which employer contributions are tax deductible.

Simplified employee pension (SEP). SEP, sometimes referred to as “super IRA,” is a plan whereby an employer who could not afford nor want the administrative burden of establishing a Keogh plan makes annual payments for the employee to an IRA established by the employee.

Once a contribution is made to a SEP, it is nonforfeitable (vested). The money contributed belongs to the employee and cannot be returned to the employer. If employment is terminated, the entire balance in the SEP account belongs to the former employee. As in the case with most qualified plans, employers receive a deduction for contributions made to a SEP plan. SEPs have higher contribution limits. Annual contributions an employer makes to an employee’s SEP-IRA cannot exceed the lesser of: 25% of compensation, or \$49,000 for 2010. The limits in the preceding sentence apply in the aggregate to contributions an employer makes for its employees to all defined contribution plans, which includes SEPs. Contributions must be made in cash. Property cannot be contributed.

Saving Incentive Match Plan for Employees (SIMPLE-IRA). This is another IRA plan, a simple alternative to 401(k)s. Limits for SIMPLE plans are lower than for most other types of employer-provided retirement plans: \$11,500 for 2010 (\$14,000 for age 50 or older), as compared to \$16,500 for convention defined contribution plans (Section 402(g) limit) like 401(k), 401(a), and 403(b) plans.

Retirement plans: The basic rules

Types of individual retirement plans are:

- ▶ Individual retirement accounts (IRAs).
- ▶ Roth IRAs.
- ▶ Keoghs.
- ▶ Annuities.

An easy way to start narrowing the field when choosing between retirement plans is to consider the restrictions. IRAs, 401(k)s, and Roth IRAs, though ubiquitous, are not available to everyone. Your ability to contribute to a Roth IRA is restricted by income; your ability to deduct contributions to a traditional IRA depends on whether you're covered by another qualified retirement plan; your ability to contribute to a 401(k) plan depends on your employer.

Here's a rundown of who can and can't contribute to each type of plan.

Traditional IRA

If you are offered a qualified plan at work—a defined-benefit plan, a 401(k), a SEPIRA, or a public employee pension—your ability to deduct contributions to a traditional IRA depends on your income. A taxpayer who is covered by such a plan and files his or her tax return using the filing status of married filing a separate return may not deduct any IRA contribution. See Exhibit 4 for the phase-out ranges based on modified adjusted gross income (AGI). If you are not covered by a qualified pension at work, you can deduct contributions to a traditional IRA no matter how much you earn. Any wage earner can make a nondeductible contribution to a traditional IRA. However, if your contribution is not deductible, it's smarter to invest in a Roth IRA instead.

Roth IRAs

A Roth IRA is an Individual Retirement Arrangement (IRA) which differs in several significant ways from other IRAs. In contrast to a traditional IRA, contributions to a Roth IRA are not tax-deferrable. Withdrawals are generally tax-free, but not always and not without certain stipulations (i.e., tax free when the account has been opened for at least 5 years for principal withdrawals and the owner's age is at least 59½ for withdrawals on the growth portion above principal). An advantage of the Roth IRA over a traditional IRA is that there are fewer withdrawal restrictions and requirements. Transactions inside the Roth IRA account (including capital gains, dividends, and interest) do not incur a current tax liability. You can contribute to a Roth IRA if your income falls below the Roth limits. You're allowed a prorated contribution if your income falls within the "phase-out" range. If your income exceeds the income range you won't qualify for a Roth IRA contribution (see Figure 12.3)

Figure 12.2: Higher limits of contribution

YEAR	IRA LIMITS	ROTH IRS LIMITS	IRA AND ROTH IRA CATCH-UP PROVISIONS	401(K), 403(B), & 457 PLAN LIMITS	401(K), 403(B) & 457 PLAN LIMITS CATCH-UP PROVISIONS
2009	5,000	5,000	6,000	16,500	22,000
2010	5,000	5,000	6,000	16,500	22,000

Figure 12.3: Roth IRA phase-out range and limits

YEAR	SINGLE	MARRIED FILING JOINTLY
2009	\$105,000 - \$120,000	\$166,000 - \$176,000
2010	\$105,000 - \$120,000 *(Rollover limit removal)	\$167,000 - \$177,000 *(Rollover limit removal)

*Though the 2010 Roth IRA conversion limit is removed, phase out limits still apply for contribution.

401(k) plans

Your ability to contribute to a 401(k) is up to your employer. If your employer offers a plan for which you qualify, you can contribute up to the amount shown in Figure 12.2 annually, or about 15 percent of your income, whichever is less.

Keogh plan

A Keogh pension plan, also called HR 10 plan, is tax deferred for self-employed people satisfying specified criteria. It can take three forms: a profit sharing plan, a money purchase pension plan, or a combination of both.

Higher limits of contribution to various retirement accounts

The Economic Growth and Tax Relief Reconciliation Act of 2001 gradually raises the amount employees can contribute via salary reduction to employer-sponsored retirement plans. Figure 12.2 presents the annual limit for years 2009 and 2010 for contributions to employer-sponsored retirement plans, 403(b), 401(k) plans, and government 457 plans. Contributions to these plans will increase each year. The law includes "catch-up provisions that enable people age 50 and over to make additional contributions.

IRA contribution limits will also increase and, as with employer-sponsored plans, will include catch-up provisions. The law also increases contribution limits for Keogh plans, which are tax-deferred retirement plans for self-employed individuals and their employees.

How do annuities work?

Annuities are insurance contracts. You can pay a single large premium, annual premiums, or flexible premiums to the company, and at retirement, you can obtain periodic payments for a stated time period (the maximum being lifetime) or take periodic withdrawals. The periodic withdrawals have limits set by the insurance company. The payments accumulate tax-free and are subject to tax only when withdrawn when you retire. Hopefully, your tax rate will be lower at that time. Annuity payments begin at retirement. The two types are fixed and variable.

Fixed (guaranteed) annuities

Your principal plus a minimum interest is guaranteed for a year or more. There is no capital gains (or appreciation) potential with fixed annuities. There is low risk with this policy. You get both a “minimum~ interest rate plus an “extra~ interest rate based on prevailing rates in the market. The following is a summary of information on fixed annuities.

Tax-deferred income	Yes
Price stability	Yes
Capital gain (or loss) potential	No
Different payout options	Yes
Different payment options	No (except due to age)
Contribution limits	Not restricted to earned income
Source of funds	No
Choice of underlying investments	No
Federal deposit insurance	No
Surrender charge	Yes
IRS early withdrawal penalty	Yes
Mandatory withdrawals	Typically by age 85
Rate-guaranteed periods	For 1, 3, 5, 7, or 10 years

Like a bond or a bond fund, a fixed annuity may fail to provide a satisfactory inflation hedge, thereby subjecting the investor to purchasing-power risk.

Variable annuities

In a variable annuity, there are no guarantees like fixed annuities. The policy value changes with the performance of an underlying investment fund, much like a mutual fund within a family of funds. Investment risk lies with the investor. Many insurance companies permit you to change to a different fund of a variable type and to change the percentage mix of the funds as frequently as the annuity contract allows. You pay taxes on the amount distributed from the capital appreciation of the annuity value.

Tax-deferred income	Yes
Price stability	No
Capital – gain (or loss) potential	Yes
Different payout options	Yes
Different payment options	Yes
Contribution limits	No (except due to age)
Source of funds	Not restricted to earned income
Choice of underlying investments	Yes
Federal deposit insurance	No
Grace period	Yes
Surrender charge	Yes
IRS early withdrawal penalty	Yes
Mandatory withdrawals	Typically, by age 85
Rate-guaranteed periods	No

One type of variable annuity that has become more popular in recent years is the equity-indexed annuity. An equity-indexed annuity has a minimum guaranteed return, but allows the annuitant to participate in part of the gains of a specified stock market index. The advantage of equity-indexed annuities is the low risk because of the minimum guaranteed return. The disadvantage is that the potential return is less than the potential return on a variable annuity. The annuitant receives only a portion of the increase in the stock-market index to which it is linked. The participation rate determines how much of the increase in the related stock-market index will be credited as interest to the annuitant. For example, if the participation rate was 75 percent and the related stock-market index increased by 10 percent, the annuitant would receive an interest rate of 7.5 percent ($75\% \times 10\%$) for that period. The features, benefits, and limitations of equity-indexed annuities vary across insurance companies.

What are the advantages of annuities?

Annuities offer three main advantages:

- ▶ Tax-deferred compounding of interest.
- ▶ Unlike retirement plans, annual contributions are not restricted.
- ▶ Another form of savings plan.

What are the disadvantages of annuities?

The disadvantages of annuities are as follows:

- ▶ Commission (usually 7 or 8 percent) is often high.
- ▶ You cannot withdraw funds before age 59 1/2. Otherwise, a tax penalty will be assessed (10-percent charge). Also, there are penalties called *surrender charges* imposed by the insurance carrier if you cash in the policy early. However, no penalty would apply if you become disabled or die. (One way to avoid the early withdrawal penalty is to annuitize, taking regular payments for the remainder of your life). Such charges may start around seven percent for withdrawals in the first year and phase down by one percentage point each year after that.
- ▶ The interest earned may not keep up with and/or be less than the return on alternative investment opportunities.
- ▶ Annuity income is taxed as ordinary income, not as qualified dividends or capital gains, which can be stiff if you are in a high tax bracket.
- ▶ They are *non-qualified* annuities, meaning annuities having a tax-deferral benefit but paid in after-tax dollars.

What are qualified annuities?

Qualified annuities, on the other hand, fund pension plans. The contributions accumulate tax-deferred and are either tax deductible or exempt from your income. If you qualify, always take advantage of IRAs and Keoghs, because contributions are in before-tax dollars.

What are some types of annuities?

Annuities may include:

- ▶ *Life annuity*. The annuity continues for the life of the annuitant. This usually results in the highest periodic payment.
- ▶ *Life annuity with period certain*. The annuity covers the life of the annuitant, but if that person dies early, the annuity continues for a specified minimum period.
- ▶ *Joint and last survivor annuity*. If the annuitant dies, the annuity continues for the life of another person (usually the spouse).

What sales charges exist?

You can invest in variable annuity contracts by making lump-sum investments or by signing a long-term investment contract (contractual plans). The plan custodian is required to send investors a statement of total charges within 60 days after the plan certificate is issued and inform you of the right to withdraw within 45 days from the date the notice is mailed. Sales charges vary.

Front-end load. Up to 50 percent of the sales charges may be subtracted from the first 12 monthly payments (in equal amounts). If the plan is liquidated within 18 months, you receive a refund of sales charges paid in excess of 15 percent of the total invested.

Spread-load plan. Up to 64 percent of all sales charges over the first four years can be subtracted, but no more than 20 percent in any one year.

How do you purchase annuities?

Advice in purchasing annuities follows:

- ▶ Be wary of unusually high “teaser” rates offered, which are a sign of a financially weak company. Deal with a firm that is financially sound and strong. There was an instance where Baldwin-United, a leading annuity seller, filed for bankruptcy.
- ▶ Purchase annuities only from highly rated insurance companies by referring to A.M. Best’s publication, *Best’s Insurance Reports*. Also refer to *Standard & Poor’s*, *Moody’s*, and *Duff & Phelps* rating publications.
- ▶ Diversify among insurance companies to get a blending of rates and maturities. In fact, dozens of mutual fund families manage variable annuity portfolios.
- ▶ Evaluate the investment performance of the insurance companies.
- ▶ Diversify the variable annuities.
- ▶ Consider all service charges as well as contract features and terms.
- ▶ Closely review the prospectus.
- ▶ Compare insurance companies.

Note: For comparison shopping, refer to the monthly *Morningstar Variable Annuity/Life Performance Report* ((800) 876-5005) and *Lipper Mutual Fund Quarterly on Variable Annuities and Life Accounts* that appear in *Barron’s*.

Is an annuity right for you?

Consider an annuity if you:

- ▶ Do not have other tax-deferred pension plans.

- ▶ Want to save for retirement or otherwise.
- ▶ Want the assurance of a guaranteed check when you retire.
- ▶ You are uncomfortable with selecting your own investments, such as stocks.

You may not consider annuities if you:

- ▶ Can use alternative tax-deferred savings plans.
- ▶ Anticipate adequate income and savings from other sources.



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Mutual Funds

If you are an investor who wants funds managed by experts and you have limited resources, you can get diversification by investing in a mutual fund. A mutual fund is an investment company that is in the business of investing and managing other people's money. It invests in a variety of securities. When you buy shares in a mutual fund, you become a part owner of such a portfolio of securities.

What is mutual fund investing?

A mutual fund is managed by professionals and uses the money to buy diversified securities portfolios. Ownership is in the form of proportionate shares.

Example 1

Mutual Fund X has the securities below:

STOCK	NUMBER OF SHARES
GE	200
AT&T	300
Intel	500

If you have a 3% ownership in the fund, it equals:

6 shares of GE, 9 shares of AT&T, and 15 shares of Intel.

What are the attributes of mutual funds?

Mutual fund investing is characterized by:

1. *Diversification.* Your investment money may be used to buy a broad range of equity, debt, and other securities. Diversification reduces your risk.
2. *Automatic reinvestment.* Dividends, interest, and capital gains may be reinvested into the fund, usually at no charge
3. *Automatic withdrawals.* Funds may be withdrawn, usually at no charge.
4. *Liquidity.* You can redeem your shares at any time.
5. *Switching.* You can go from one fund type to another in a family of funds.
6. *Small minimum investment.* Some mutual funds can be bought into initially for less than \$1,000.

What are common services offered by mutual funds?

A major reason for the attractiveness of mutual funds is the many convenient services offered to their shareholders. Some can be used in your investment strategy. Common services are summarized in Table 13.1.

Table 13.1: Major services of mutual funds

1. Accounting and reporting for tax purposes
2. Safekeeping and custodian services
3. Automatic reinvestment
4. Exchange privileges
5. Periodic withdrawals
6. Checking privileges
7. Acceptance of small investments
8. Tax-sheltered plan (e.g., IRA and Keogh)
9. Guardianship under the Uniform Gift to Minor Act
10. Pre-authorized check plan.

How is net asset value (NAV) determined?

The price of a mutual fund share is stated as net asset value (NAV). It is computed as follows:

$$\frac{\text{Fund Total Assets} - \text{Debt}}{\text{Number of Shares Outstanding in the Fund}}$$

Example 2

Assume on a given date, the market values in a fund follow. The fund has liabilities of \$4,500. Then NAV of the fund is calculated below:

a) GE - \$100 per share x 200 shares	= \$20,000
(b) Westinghouse - \$50 per share x 300 shares	= 15,000
(c) CBS - \$75 per share x 100 shares	= 7,500
	Total assets
	\$42,500
(d) Liabilities	4,500
(e) Net asset value of the fund's portfolio	\$38,000
(f) Number of shares outstanding in the fund	1,000
(g) Net asset value (NAV) per share = (E)/(F)	\$38

Assume you own 3% of the fund. Your investment is worth:

$$3\% \times 1000 \text{ shares} = 30 \text{ shares}; 30 \text{ shares} \times \$38 = \$1,140$$

How do you make money in a mutual fund?

You make money from the change in net asset value, dividends, and capital gains.

Dividends

Mutual funds typically pay out a large percentage of their income. You are fully taxed on dividends.

Capital gains distribution

Capital gains are distributed each year to fund holders. You are taxed at the maximum capital gains rate of 15%. Do not just consider NAV. It only shows the current market value of your portfolio. Look at the number of shares you own and total value. Your shares will increase over time from dividends and capital gains reinvestment into more shares.

Multiply the number of shares you own by the net asset value per share to determine value.

What is the total return on the mutual fund?

Total return equals:

(Dividends + Capital gains distributed + Price appreciation in fund).

The percentage return equals:

$$\frac{(\text{Dividends} + \text{Capital Gain Distributions} + (\text{Ending NAV} - \text{Beginning NAV}))}{\text{Beginning NAV}}$$

where (ending NAV - beginning NAV) is price appreciation.

Example 3

Your mutual fund paid dividends of \$1.00 per share and capital gain distributions of \$.40 per share this year. NAV at the beginning of the year was \$10.00, and \$12 per share at the year-end. Percentage return equals:

$$\frac{\$1.00 + \$.40 + (\$12 - \$10)}{\$10} = \frac{\$3.40}{\$10} = 34\%$$

How much will mutual funds charge you?

If you invest in a mutual fund, there will be some kind of fee. When shopping for funds, you should take a close look at these charges. The charges may be classified as follows: load, management fee, 12b-1 fees, back-end loads, deferred loads, and reinvestment loads.

Load

A load is the fee to buy shares as a form of sales charge. Such charge may range from 1 percent to 8.5 percent (maximum legal limit) of the amount invested. That means if you invested \$1,000 in a fund with an 8.5 percent load, only \$915 would go into the fund. Mutual fund prices are stated in “bid” and “ask” form. The bid is the price the fund will buy back its shares (at the NAV). The ask or “offer” is the price the investor must pay to buy shares. The difference between the offer and bid is the load. “No-load” mutual funds have no sales fees so there is the same bid and ask prices. *Note:* A sales fee does not mean better performance of the fund. The fee will reduce your net return rate. Load funds do not perform better than no-load funds.

Management and expenses fees

All funds (“no load” or “load”) charge a fee to pay a portfolio manager. It typically ranges from 0.5 percent to 1 percent of the fund’s assets.

12b – 1 fees

These charges are for advertising and promotion. They typically range from 0.25 percent to 0.30 percent, but some run as high as 1.25 percent.

Back-end -end loads, or redemption fees

These are charged when you sell your shares. They are based on a percentage of the shares’ net asset value, so steep back-end loads can reduce your profits or increase your loss.

Deferred load, or contingent deferred sales fees

These are deducted from your original investment if you sell shares before a specified period.

Reinvestment loads

These fees are taken out of reinvested interest, dividends, and capital gains. For example, if you receive a capital-gains distribution of \$150 and the reinvestment fee is 7 percent, the fund will keep \$10.50 and reinvest \$139.50.

What kinds of mutual funds exist?

Mutual funds are categorized by type depending on purpose, structure, fees, switching privileges, return potential, and risk. You can invest virtually in any type of fund based on your investment goals. There are two basic types of funds: open-end funds, commonly called mutual funds, which can sell an unlimited number of ownership shares, and closed-end funds, which can issue only a limited (fixed) number.

What is the difference between open-end and closed-end funds?

In *open-end funds*, you purchase from and sell shares back to the fund. You can redeem shares when you so desire. Shares are bought at NAV plus service fee, and redeemed at NAV less a commission. In *closed-end funds* there is a fixed number of shares traded on the stock exchange or over-the-counter market. Share price is determined independently of NAV by factors of supply and demand. Management fees are assessed by all funds.

Table 13.2 summarizes the difference between open-end funds, just known as mutual funds, and a closed-end investment company.

Table 13.2: Differences between open-end and closed-end funds

	MUTUAL FUNDS	CLOSED-END FUNDS
Number of shares	Fluctuates	Fixed
Traded at net asset value (NAV)	Yes	No – a discount or premium
from NAV		
Liquidity	Almost immediate	3 business days
Dividends and capital gain	Can be reinvested	Some offer automatic reinvestment
Accessibility	Yes; via a toll-free phone;	
Check-writing privileges	Limited	
Method of purchase	Direct from fund or fund	
salesperson	Stock exchange or OTC	
Flexibility	Yes, exchange privileges	No
Commission	Load or no-load	Yes

What types of mutual fund are there?

Mutual funds may be categorized as follows:

Money market funds. Money market funds invest solely in short-term debt securities. The price of the fund is constant, so it is very conservative. You can buy and sell shares at \$1.00. Money market funds provide high interest income with safe principal.

Growth funds. Growth funds want high return via capital gains. They usually invest in companies with growth exceeding the inflation rate. These stocks have low current income. Like other growth investments, the aim of these funds is to increase share value, not pay dividends.

Aggressive growth (capital appreciation) funds. Funds taking greater risk for high capital appreciation. Dividend income is secondary. They concentrate on new, high-tech businesses. They offer the greatest potential for growth, but also the greater risk. *Note:* These funds are appropriate if you are not especially worried about near-term variability in return but with long-term appreciation. Aggressive strategies taken may consist of leverage purchases, short selling, call options, put options, and buying stock.

Income funds. Income funds generate current income through investments in securities that pay interest or a cash dividend. These securities include dividend-paying stocks, corporate bonds, and a variety of government securities. Generally, the higher the income sought, the riskier the underlying investments. They offer current income with low to high risk.

Growth and income funds. Growth and income funds emphasize current dividend or interest and capital appreciation. They offer moderate growth potential and moderate risk. The objective is long-term growth. Share value should be stable.

Balanced funds. Balanced funds seek preservation of capital while seeking growth and income. The aim of these funds is to “balance” the portfolio with the best ratio of stocks and bonds within the funds’ investment objective guidelines. This is done to adjust to prevailing market conditions. Balanced funds tend to underperform all-stock funds in strong bull markets.

Index funds. Index funds invest in a broad group of stocks based on an index such as the Standard & Poor’s 500. Vanguard Index Trust Fund matches the stock index.

Sector (specialized) funds. Sector funds invest by industry (ies). High risk exists because the fortunes of the fund depend on the performance of the specific industry. If an industry takes a “hit” such as pharmaceuticals, huge losses will ensue.

International funds. International funds invest in securities of overseas (foreign) companies. Some international funds invest in one geographic area, such as Fidelity

Canada Fund and Vanguard Trustees Commingled International Portfolio. Fund value increases if the dollar decreases due to exchange rates.

Municipal tax-exempt funds. Tax-free funds seek current, tax-free income by investing for the most part in tax-exempt bonds issued by municipalities to build schools, highways and public projects. They offer current tax-exempt income with low to high risk depending on the yield sought and individual investments.

Target-date funds for retirement. Relative newcomers to the investing scene, catching on big-time, with assets nearly tripling to \$33 billion over the past 2½ years. The funds are usually available in five- or 10-year increments from 2007 to 2050. The fund then invests your retirement money in a diversified blend of stocks, bonds, and cash that has a risk/return profile appropriate for someone your age— heavier in stocks if you’re young, heavier in bonds and cash if you’re older.

Exchange-Traded Fund (ETF) A security, rather than a mutual fund, that tracks an index, a commodity or a basket of assets like an index fund, but trades like a stock on an exchange, thus experiencing price changes throughout the day as it is bought and sold. Because it trades like a stock whose price fluctuates daily, an ETF does not have its net asset value (NAV) calculated every day like a mutual fund does.

Comparing target funds			
Asset allocations, expenses and underlying investments can vary dramatically depending on which target fund you choose. As this comparison of large retail funds designed for an investor in his or her late forties to early fifties shows, Vanguard offers the most conservative mix and the lowest expenses.			
Fund	Asset mix	Annual expenses	What it invests in
T. Rowe Price Retirement 2020	80% stocks 20% bonds	0.81%	10 actively managed T. Rowe Price funds and the firm's S&P 500 index fund
Fidelity Freedom 2020	72% stocks 28% bonds	0.87% ¹	18 actively managed mutual Fidelity funds
Barclays LifePath 2020	66% stocks 34% bonds	1.1% ²	Index funds and “enhanced” index portfolios that strive to beat their benchmark
Wells Fargo Outlook 2020	66% stocks 34% bonds	1.25% ² or 2% ³	6 portfolios that replicate standard indexes
Vanguard Target Retirement 2025	60% stocks 40% bonds	0.23%	4 Vanguard index funds

Notes: ¹Reflects an expense waiver of 0.02%. ²Reflects an expense waiver of 0.34%. LifePath funds in a 401(k) would have expenses of 0.85%, which also reflects a waiver of 0.34%. ³Expenses vary depending on share class of fund and reflect a waiver of 0.02% or 0.03%; Outlook shares in a 401(k) would have expenses of 0.95%. Source: The funds.

What investment programs are tied with mutual funds?

There are many different kinds of mutual funds as well as diverse ways to buy them. You should consider your financial status, and investment objectives. Some available investment programs follow:

Accumulation Plan. You invest periodically, (e.g., monthly). Minimum investments may be required (e.g., \$100 per month). This approach is advisable for long-term investors.

Withdrawal Plan. You obtain periodic payments (e.g., quarterly) of a given sum.

Life Insurance-Mutual Fund Plans. There is a combination of life insurance with shares of the mutual fund. If the fund performs well, it pays your insurance premiums. If not, you must pay the premium.

Automatic Dividend Reinvestment. Fund proceeds (dividends and capital gains) are automatically reinvested.

Individual Retirement Accounts (IRA). You contribute \$4,000 before-tax-income this year. When you take out money at retirement, hopefully you will be in a lower tax rate.

Payroll Deduction Plans. Amounts are withheld from your salary and used to buy fund shares. Typically, there is no load.

401(k) and 403 (B) Plans. 403(B) plans is for employees working at non-profit entities.

How do you select a bond (income) fund?

In selecting a bond fund, consider:

- ▶ **Quality.** How is the fund rated by Standard & Poor's and Moody's?
- ▶ **Maturity.** What is the life? What effect will changing interest rates have? A longer maturity means wider price fluctuation. For example, a 10-year bond varies more in price than a 5-year bond. *Note:* Check out the *duration* of your bond fund. Some bond funds manage to produce top returns without undue volatility. For example, Harbor Bond Fund has returned a respectable return -an annualized 11.5 percent over the past five years. Yet its duration is a middle-of-road 5.3 years.
- ▶ **Premium or discount.** Funds selling at a premium are above face value. Such funds are less susceptible to losses if interest rates increase. Funds selling at a discount are below face value. Bonds trading at a discount to face value can lose most.

- ▶ **Total return.** Bonds generate more than interest payouts. There is also the question of capital gains or losses, which can make a huge difference in performance. Total return reflects both interest and price changes.
- ▶ **Commissions, loads or fees.** Check fees. The difference between yields on the best and worst bond funds is often slight. Such fees can be more important to total return than to the money manager. Check out the expense ratio.
- ▶ **Prepayment risk** and **currency risk.** Prepayment risk exists with funds that invest in mortgage-backed securities, such as Ginnie Maes. Mortgage prepayments accelerate when interest rates decline, and can appreciably shorten your expected long-term string of high payments. Currency risk exists with international bond funds. For example some international funds frequently generate handsome returns, not because of higher interest abroad, but because of a fall in the U.S. dollar value.

What guidelines should you follow when investing in a bond fund?

You must remember the following guidelines:

- ▶ Increasing interest rates means lower NAV of bond funds. Therefore, instead of concentrating just on current yield, consider the total return (yield plus capital gains from declining interest rates or less capital losses if interest rates increase).
- ▶ All bond funds do not react the same way when interest rates decline. If you believe interest rates will drop, purchase funds that invest in U.S. Treasuries or high quality corporate bonds. Consider high-yield junk bonds if you think interest rates will be stable or up. Consider the *duration* of the fund in measuring interest rate risk.
- ▶ Bond funds vary greatly. Some are aggressively managed and contain high risks; others buy only government issues and are best suited for conservative investors. Read the prospectus.
- ▶ Consider the taxability of interest payments. Interest payments on municipal bonds are generally free from federal income tax and from some state taxes if issued within that state, which is particularly important for investors living in states with high tax rates.

Note: Bond funds are rated on the basis of *standardized (SEC) yield*.

Are tax-exempt municipal bond funds for you?

Increases in tax rates have brought tax-free income more attention lately. But you don't need to be in the top brackets to benefit from municipal bonds. As long as your federal rate is 28%, you should give serious consideration to municipal bond funds. When trying to decide how much better (or worse) off you would be with a tax-exempt bond fund than with a taxable bond fund, it's useful to examine your *taxable equivalent yield*, which was discussed earlier.

If similar but taxable bond funds yield less than your taxable equivalent yield, then you are better off in the muni fund, while if taxable funds yield more, you are better off in the taxable fund. What is meant by "similar"? It is important to compare bond funds with a similar average maturity and credit quality. Comparing, for example, the taxable equivalent yield of a short-term muni portfolio with a long-term high-yield corporate fund is not meaningful. *Note:* Muni-bond funds have call risk, which refers to the danger that a bond carrying a relatively high coupon will be called in for early redemption by its issuer. Nearly all municipal bonds have some sort of call provision.

In picking a muni bond fund, what factors should you consider?

1. *Portfolio composition.* What sectors does the fund invest in? Is this diversified enough?
2. *Credit quality.* Look at the breakdown of the fund in terms of credit rating. The larger the proportion of investment grade bonds, the lower the credit risk.
3. *Duration.* The longer the duration, the greater the interest rate risk.
4. *Standard deviation.* The most common statistical indicator of an asset's risk.
5. *Yield.* Based on the standardized SEC 30-day yield and total return.
6. *Expense ratio.*

Are unit investment trusts for you?

Similar to a mutual fund, a unit investment trust gives investors the benefits of a professionally managed diversified portfolio. But, unlike a mutual fund, the portfolio is constant. After the initial selections are done, there is no active management. Unit investment trusts include tax-free municipals, corporate bonds, preferred stock and common stock. Unit trusts are good for those on fixed income and who are guaranteed a return on capital. After the fund ceases, investors shares are redeemed.

What has been the performance of their mutual fund?

Mutual funds, like any other investments, are evaluated on the basis of return and risk.

What is the return on the mutual fund?

The return on a mutual fund equals (1) dividend (interest) income, (2) capital gains, and (3) change in NAV of the fund. Using the statement you get from the mutual fund, complete the form in Figure 13.1.

The following example uses the data provided in Figure 13.2 (Your Mutual Fund).

Figure 13.1: Figuring your personal rate of return

	EXAMPLE	YOUR FUND
1. The number of months for which your fund's performance is being measured.	5	_____
2. Your investment at the beginning of the period. (Multiply the total number of shares owned by the NAV.) $[(0 + 246.063) \times \$10.16]$	\$2,500.00	_____
3. The ending value of your investment. (multiply the Number of shares you currently own by the current NAV.) $(578.537 \times \$11.91)$	\$6,890.38	_____
4. Total dividends and capital gains received in cash – not reinvested (\$0)	0.00	_____
5. All additional investments (any redemptions subtracted) $(\$2,500 + 1,000)$	\$3,500	_____
6. Computation of your gain or loss		
Step (a): Add line 2 to $\frac{1}{2}$ of the total on line 5 $[\$2500 + \frac{1}{2}(\$3500)]$	\$4,250.00	_____
Step (b): Add line 3 and line 4, then subtract $\frac{1}{2}$ of the total on line 5 $[(\$6890.38 + \$0) - \frac{1}{2}(\$3500)]$	\$5,140.38	_____
Step (c): Divide the Step (b) sum by the Step (a) sum $(\$5140.38/\$4250)$	1.2095	_____
Step (d): Subtract the numeral 1 from the result of Step (c), then multiply by 100 $[(1.2095 - 1) \times 100]$	20.95	_____
7. Compute your annualized return. (Divide the number of months on line 1 into 12; multiply the result by the Step (d) %.) $[(12/5) \times 20.95]$	50.28	_____

Figure 13.2: Your Mutual Fund Inc.

DATE (20X1)	TRANSACTION	DOLLAR AMOUNT	SHARE PRICE	SHARES	SHARES OWNED
	Beginning balance				0.000
07/19	Purchase	\$2,500.00	\$10.16	246.063	246.063
08/17	Purchase	2,500.00	10.87	229.991	476.054
11/30	Purchase	1,000.00	11.27	88.731	564.785
12/22	Dividend reinvest .09	50.83	11.91	4.268	569.053
12/22	Short-term Cg rein .07	39.53	11.91	3.319	572.372
12/22	Reinvest cap gain .13	73.42	11.91	6.165	578.537
12/22	Ending balance	\$6,890.38	11.91		578.537

What are the measures of risk (or volatility) of a mutual fund?

In evaluating how the fund did, consider the published measures of risk or volatility of the funds to ascertain the amount of risk. There are three popular measures of risk: Beta, R-squared, and standard deviation.

What is beta?

Beta shows how volatile a mutual fund is compared with the market as a whole, as measured by the Standard & Poor's 500 index on the equity side and the Barclays Capital Aggregate Index on the bond side.

Beta	Meaning
1.0	A fund goes up in price the same as the market.
>1.0	The fund goes higher in bull markets and lower in bear markets than the market.
<1.0	The fund is less risky relative to the market.

Example 4

A fund with a 1.10 beta is expected to perform 10 percent better than the market in up markets, and 10 percent worse in down markets. By the same token, a fund with a beta of 0.75 should capture 75 percent of the market gains in a rally and lose only 75 percent as much in a decline.

What are R-squared and standard deviation?

Some analysts prefer to use R-squared or standard deviation, shown as “R²” or “Std. Dev.” in mutual fund tables such as those in Morningstar’s Mutual Fund Values. R-squared, ranging from 0 to 100, gives you an idea about what percentage of a fund’s performance is explained by that of the benchmark (such as S&P). The higher the R-squared, the higher the relationship between the funds and the benchmark and thus the more relevant is the beta figure.

Standard deviation says that in 95 cases out of 100, the fund’s period-ending price will be plus or minus a certain percentage of its price at the beginning of the period, usually a month. In general, the higher the standard deviation, the greater the volatility or risk.

Note: If beta, R², and/or standard deviation are used to help pick a fund, these measures should cover at least *three years* to give the most accurate picture about the risk and instability of the fund. All these numbers, of course, should be weighed against other indicators, including total return over at least five years, performance in the up or down market, and the experience of the fund manager.

Risk measures such as beta, R², and standard deviation for mutual funds are published in many investment publications *Value Line Mutual Fund Survey* and *Morningstar’s Mutual Fund Values*. See Figure 13.3 for a sample Mutual Fund Values Report by Morningstar.

Figure 13.3

		Alpha	Beta	R ²	Std.Dev
Pct. Rank	All Funds Objective	-1.7	0.83	96	4.85
		49	59	8	50
		22	22	9	23

Percentile Ranks: 1=Highest 100=Lowest
Except MFV RISK: 1=Lowest 100=Highest

What is alpha value?

Alpha value of a security, also called *average differential return*, is the difference between the actual return and the return predicted by the overall mutual fund *beta*. It has been used to evaluate performance of mutual funds. Generally, a positive alpha (excess return) indicates superior performance, while a negative value leads to the opposite conclusion.

Example 5

Assume that the market return is 8 percent and the risk-free rate is 5 percent. XYZ fund with a beta of 1.5 returned 7.5%. The expected return then is 9.5% ($5\% + 1.5(8\% - 5\%)$). That means the fund has a negative alpha of 2 percent ($7.5\% - 9.5\%$)

Note:

- (1) Keep your alpha high and your beta low" is a basic strategy for those who wish to generate good investment performance.
- (2) A key question for investors is: Can a fund consistently perform at positive alpha levels?

Note: Morningstar's Mutual Fund Values (Figure 13.3) shows the alpha value as well as beta, R^2 , and standard deviation.

How do you choose a mutual fund?

Selecting the "right" mutual fund for you involves the following steps:

1. Prepare a fund listing to check what type of fund is appropriate for your risk tolerance and investment needs and objectives.
2. Read the prospectus to choose a fund satisfying your requirements and risk level. The prospectus includes the funds purpose, selection criteria, performance, fees and financial condition. Read the statement of objectives as well as risk considerations and investment constraints. Look at the Statement of Additional Information containing charges and investment portfolio. Review for annual and quarterly financial information.
3. Does the fund match your requirements?
4. How has the fund performed in both good and bad times over the past 10 years? Compare this fund to comparable funds and market averages of the same type. Examine standard deviation in financial publications. What is the trend in per-share and dollar values?

Note: Many magazines such as *Business Week*, *Worth*, *Consumer Reports*, *Forbes* and *U.S. News and World Report* publish mutual fund performance statistics. Investment newsletters, such as *Morningstar* and *Lipper Analytical*, publish the fund ranking (to be discussed later), which may be a place to start.

5. How good is the fund management? *Note:* The *Value Line Mutual Fund Survey* has recently added a Manager Ratings box to its one-page fund reviews to give investors an idea of how that fund manager's performance ranks against those of his or her peers. Keep in mind that your fund is only going to do as well as the person or people who run it.

6. What is the quality of the stock portfolio? How diversified is it? *Note: Morningstar Mutual Funds* has recently added a special securities section to its fund-data page to show what percentage of a fund's assets were invested in derivatives, which are regarded as risky securities.
7. Check out a fund's expense ratio, which is the percentage of a fund's net assets incurred annually to cover management fees, transaction costs, administrative overhead, legal and auditing fees, and marketing costs (12b-1 fees). You find this information in the prospectus under the heading "Annual Fund Operating Expenses." Compare expense ratios in similar funds (see the table below) since they can affect a fund's overall performance. For example, one recent study of fund performance found that a \$10,000 investment in two no-load funds, each earning 9 percent over 20 years, would grow to \$30,475 in the fund with a 3 percent expense ratio and \$45,840 in the fund with a 1 percent expense ratio.

FUND	AVERAGE EXPENSE RATIO
Stock funds	1.5%
Taxable bond funds	1.0
Municipal bond funds	0.75

8. Compare sales and redemption fees, and shareholder services.
9. Check out fund rankings provided by various ranking services such as *Lipper Analytical Services, Inc.* and *Morningstar*. The so-called performance benchmarking can be used as a way to objectively measure a fund's performance.

What is performance benchmarking?

One way to objectively measure your fund's performance is to compare it to similar groups of investments --mutual fund peer groups and market indexes. Mutual fund peer group rankings report performance for funds with similar asset classes, strategies, objectives, and risk level.

What about mutual fund peer group rankings?

Peer group is one objective source of information that can assist you in picking the right fund. Typically, funds are first sliced into various categories based on their investment

goals. Then each fund is ranked according to a chosen criteria (such as a five-year total return, risk, or risk-adjusted return) by where it falls among all funds in its category. For example, funds in the top 20 percent get a “1” ranking and the bottom 20 percent get a “5.” The following is a partial list of ranking sources.

Morningstar rankings

This is a risk measurement system for comparing more than 2,000 mutual funds’ long-term performance available from Chicago-based Morningstar. The system rates stock and bond funds from 5 stars (the best) to no stars (the worst or unrated). Morningstar uses a proprietary system that measures a mutual fund’s price and dividend performance as well as the risks taken by the fund management to get those results. The rankings are then made from comparing a fund both in its own category and against the industry as a whole. Thus, the best performing fund in a category that has been in a weak market sector might get only 2 or 3 stars.

When choosing among mutual funds, investors can use Morningstar rankings to find potentially better-performing investments. Many brokerages and financial planning firms limit their clients’ investments to 5-star and 4-star funds. But choosing a 5-star fund over a 3-star fund is not always the correct choice. For one, Morningstar’s rankings reflect past performance and that often slants the reviews toward funds with recently successful investment styles.

In addition, within each category—notably a poorly performing sector—the highest rated fund may have succeeded by limiting its exposure to certain risks. If an investor believed that an out-of-favor market sector was ready to return, he might want to buy a fund with a lower rating that was more fully invested in that sector. *Lipper Mutual Fund Rankings* and *Value Line Mutual Fund Survey* are two other important sources.

Magazine rankings

Before buying or selling a fund, you should consult other fund-watching sources. *Business Week*, *Fortune*, *Forbes*, and *Money* magazines all print periodic analyses of individual funds and their rankings as do many newsletters and newspapers.

What market indexes are used as benchmarks?

Each fund describes its strategy and objective and also lists relevant market indexes (see Figure 13.4). These market indexes are also found in *The Wall Street Journal*, *Barron’s*, and *Investor’s Business Daily*. First find the total average annual return for the 1-, 5-, and 10-year periods for the benchmark and compare those figures with the fund’s returns for the exact same periods.

Figure 13.4: Typical market indexes used as performance benchmarks

FUNDS	INDEX
Domestic	
Growth	S&P 500
Aggressive Growth	Value Line
Small Company	Russell 2000
Government Bonds	Various Lehman Bros. Government/Corporate Bond Indexes
Municipal Bond	Lehman Bros. Municipal Bond Index
International	
Global	Morgan Stanley International World Index, Morgan Stanley Europe, Australia, and the Far East (EAFE) Indexes
Foreign Bond	Salomon Bros. Non-U.S. Dollar World Bond Index
Global Bond	Shearson World Bond Index

What risk-reducing strategies for investing in mutual funds are available?

In a bearish market, minimizing or spreading risks is particularly important. Below are five proven risk-reducing strategies for making money in mutual funds.

1. *Shoot for low-cost funds.*
Especially in difficult times, fees and expenses will loom larger, deepening losses and prolonging subsequent recoveries.
2. *Build a well-balanced, diversified portfolio.*
Sensible diversification will spread (or minimize) risks.
3. *Use the dollar-cost average method.*
Investing a fixed amount of money at regular intervals keeps you from committing your whole savings at a market peak. This is how the technique works. If your fund's NAV drops, your next payment automatically picks up more of the low-prices shares, cuts your average cost per share and raises your ultimate gain. This is discussed later.
4. *Divide your money among fund managers with different styles and philosophies.*
Funds with differing styles will take turns outperforming, and being outperformed by those with other styles. In a nutshell, you should diversify across mutual funds or a family of funds.

5. *Concentrate on short- or intermediate-term bond funds.*

Typically, the longer the maturity of the bonds in a fund's portfolio, the greater the fund's return—but also the deeper its losses as interest rates rise.

How does dollar cost averaging work?

Dollar-cost averaging is an investment strategy designed to take advantage of the market's long-term upward bias while reducing risk over time. It simply means that you invest the same amount of money on a regular schedule, whatever the market price. It eliminates the need to predict share-price movements and to figure out the right time to buy, and it protects you from putting too much money into the market at just the wrong time. Under this strategy, you buy more shares when the share price of your fund is down, and fewer shares when the price of the fund is high, which can potentially lower your average cost per share and allow you to buy more shares. And lowering your cost can reduce your downside risk. It also ensures that the entire portfolio will not be purchased at temporarily inflated prices.

Dollar-cost averaging has been most effective for mutual fund investing, whose typically small investment minimums allow you to implement this strategy easily in a cost-effective way. Many funds and brokerages make this process easy by allowing purchases through direct deductions from investors' checking accounts or paychecks.

You may unknowingly be using this strategy as part of employer-sponsored savings plans such as 401(k) retirement programs. Many of these benefit plans routinely make equal purchases of assets at set periods, quietly accomplishing dollar-cost averaging.

Dollar-cost averaging will work as long as prices of the fund targeted by the strategy rise over the long haul. Figure 13.5 shows how dollar cost-averaging works for a no-load mutual fund and compares in a hypothetical situation with two other investment strategies: lump-sum up-front investment and lump-sum investment after saving (see Figure 13.6).

Figure 13.5: Dollar-costing based mutual fund purchase plan

PERIOD	AMOUNT INVESTED	SHARE PRICE	SHARES PURCHASED
1	\$100	\$12.50	8
2	100	8.00	12.5
3	100	10.00	10
4	100	8.00	12.5
5	100	10.00	10
6	100	12.50	8

PERIOD	AMOUNT INVESTED	SHARE PRICE	SHARES PURCHASED
7	100	14.28	7
8	100	12.50	8
9	100	16.67	6
10	100	20.00	5
	\$1,000	\$124.45	87.0

Average share price = $\$124.45/10 = \12.45

Total shares owned = 87

Average share cost = $\$1,000/87.0 \text{ shares} = \11.49

Total market value now = 87 shares \times $\$20 = \$1,740$

Figure 13.6a: Lump-sum, up-front investment

PERIOD	AMOUNT INVESTED	SHARE PRICE	SHARES PURCHASED
1	\$1,000	\$12.50	80
2	0	10.00	0
10	0	20.00	0

Average share price = $\$12.45$

Total shares owned = 80

Average share cost = $\$1,000/80 \text{ shares} = \12.50

Total market value now = 80 shares \times $\$20 = \$1,600$

Figure 13.6b: Lump-sum, up-front investment after \$1,000 is saved

PERIOD	AMOUNT INVESTED	SHARE PRICE	SHARES PURCHASED
10	\$1,000	\$20.00	50

Average share price = $\$20.00$

Total shares owned = 50

Average share cost = $\$1,000/50 \text{ shares} = \20.00

Total market value now = 50 shares \times $\$20 = \$1,000$

Note that by the process of dollar-cost averaging, you have purchased 87 shares, now worth $\$20$ apiece, for a total market value of $\$1,740$ ($\$20 \times 87$ shares). You have invested only $\$1,000$ over the period. In other words, your average share cost of $\$11.49$ is lower than the average ($\$12.45$) of the market price of the fund's shares during the periods in which they are accumulated. So you've actually made money through this process. It

works because you bought more shares when they were cheap and fewer shares when they were dear.

Note: Dollar-cost averaging can result in high transaction costs that can lower returns over time. That is why mutual funds, which often charge either no sales fee or a flat commission, are a popular way to implement this strategy.

Investing in index funds: No-brainer investment method

If you want the returns of the stock or bond market, but not the risk that your fund manager makes the wrong bet, some experts suggest that you should consider an index fund. It is a sensible method for investors who are not interested in the ongoing process of evaluating funds and wish to obtain the market's return with absolutely no effort and a minimal expense. There are several mutual funds based on the S&P 500 index, which represents approximately 70 percent of the market value of all outstanding U.S. common stocks. (Very recently some index funds are available, emulating the broader Wilshire 5,000-Stock Index). According to a study by Lipper Analytical Services of New York, 83 percent of the basic stock mutual funds did *not* beat the S&P 500 index for the year 1994. Furthermore, stock fund managers have been beaten by the S&P 500 in 10 of the past 15 years.

What are the advantages of index funds?

1. You simply send one check, need make no further decisions, and are guaranteed the same annual return as the market as a whole.
 2. Lower management costs typically are passed to the fund owner. Index funds are cheap to run since there is no need for any research staff. The average index-fund charges about 0.3 percent, or \$3 for every \$1,000 invested.
 3. Index funds usually have all their money in stocks or bonds with no cash cushion needed. The typical actively managed fund keeps a cash cushion of 3 to 10 percent of the portfolio, which is used to handle investor withdrawals and to seek new opportunities. Cash, being the worst performing asset, has been a drag on long-term performance.
 4. There is a tax savings advantage. Since index funds rarely trade the securities they hold, there exists significantly less capital gains and thus fewer taxes.
- Note:* 1. There are also index funds available that track foreign securities markets. They typically emulate the EAFE (Europe and Far East) index. These are excellent vehicles for obtaining the risk reduction and profit opportunities from international diversification.
2. *Vanguard* has the widest selections of stock, bond, and EAFE index funds. Others include *DFA* and *Wells Fargo Bank's Stagecoach* funds.

Where can you obtain mutual fund information and ratings?

With 6,000-plus mutual funds in existence today, there is not one source that will satisfy your information needs completely. You may refer to the following important sources of mutual fund information:

- (1) *Mutual Fund Fact Book* and *A Guide to Mutual Funds*. The Investment Company Institute, 1775 K Street NW, Suite 600, Washington, D.C. 20006 and Wiesenberger Investment Companies Service, Warren, Gorham & Lamont, 210 South St., Boston, MA 02111

These list most mutual funds broken down by investment objective, statistics on specific funds, background on trends in the mutual fund industry, and brief mutual fund term definitions.

- (2) *The Individual Investor's Guide to No-Load Mutual Funds*. The American Association of Individual Investors, 625 North Michigan Avenue, Department NLG, Chicago, IL 60611. (312) 280-0170.

This classic guide provides investment objective, operating statistics, and various performance measures, covering 436 mutual funds.

- (3) *Investor's Directory* and *No-Load Mutual Fund Resource List*. No-Load Mutual Fund Association, P.O. Box 2004, JAF Station, New York, NY 10116.

- (4) *The Investor's Guide to Closed-End Funds*, Thomas J. Herzfeld Advisors, Inc. (www.herzfeldresearch.com) P.O. Box 161465 Miami, FL 33116 and *The Complete Guide to Closed-End Funds*, International Publishing Corporation, 625 North Michigan, Chicago, IL 60611. They are excellent publications providing a description of various fund characteristics, covering the over 160 traded closed-end funds on the NYSE, AMEX, and OTC markets.

These publications offer a bibliography of newsletters, magazines, books, other publications and organizations, including advisory services.

You can get help in selecting mutual funds from a number of sources, including investment advisory services that charge fees. More readily available sources, however, include *Money*, *Forbes*, *Barron's*, and *The Kiplinger Personal Finance*. *Money* has a "Fund Watch" column appearing in each monthly issue. In addition, it ranks about 450 funds twice a year reporting each fund's 1-, 5-, and 10-year performances along with a risk rating. *The Kiplinger Magazine* publishes its review in October.

Forbes has an annual report covering each fund's performance in both up and down markets. In terms of grading, the top 12.5 percent get an A+; the next 12.5 percent, an A; the next 25 percent, a B; and so on. Value Line Investment Survey shows

the make-up of the fund's portfolio beta values. Note: You should not choose a fund only on the basis of its performance rating. You should consider both performance and risk.

You can read up on mutual funds in various newspapers including the *Wall Street Journal*. The college and public library are stocked with these publications and books on the subject.

Virtually all funds have toll-free telephone services through which you can get detailed information on each family of funds. Toll-free numbers can easily be obtained by calling the toll-free directory service (800) 555-1212. Also you can visit their Web sites for details.

How do you pick the right fund using the PC?

One way to pick the right mutual fund is with the help of the PC. Many financial and investment Web sites offer screening devices that allow you to quickly screen over 2,000 mutual funds using criteria which mirror your investment philosophy, to find only the ones which are consistent with your goals, and directly obtain a detailed report on a fund. Screening criteria include:

1. Investment objective (for example, aggressive growth, growth, international, municipal, etc.).
2. Fees (no-load or load) and expense ratios.
3. Performance ratings and rankings.
4. Total asset size.
5. Management company.
6. Dividend yield.
7. Risk ratings (for example, beta and alpha).

What about investing in money market funds?

Money market funds are a special form of mutual funds. The investor can own a portfolio of high-yielding CDs, T-bills, and other similar securities of short-term nature, with a small amount to invest. There is a great deal of liquidity and flexibility in withdrawing funds through check-writing privileges. They are therefore called "cash equivalents." Money market funds are considered very conservative, because most of the securities purchased by the funds are quite safe.

The yield, however, fluctuates daily. Despite the myth that all money funds perform about the same, some regularly offer significantly higher yields than others, chiefly because they keep their expenses low.

What are the advantages of money market mutual funds?

- ▶ Interest earned. No-load.
- ▶ Possible small initial deposit.
- ▶ Possible check-writing account privileges.

The disadvantage is that these funds are not federally insured.

What questions should be asked in picking a money market fund?

1. What is the average maturity? *Note:* The shorter the average maturity, the safer the fund is likely to be, and the faster the fund will begin offering competitive yields if interest rates rise.
2. Can you write checks against your fund without charge?
3. What is the minimum check amount, \$200 or \$250 or \$500? *Note:* The smaller the amount, the more often you can use your fund as a parking place for future investment or for emergency.
4. How much do you need to open an account?
5. What is the expense ratio? The expense ratios of money-market funds range from about 0.3% a year to 2%.

What sources of information exist, including on-line services?

Most mutual fund families offer a money market fund to investors. Current yield quotes and average maturity can be found weekly in *The Wall Street Journal*, *Barron's*, and other daily newspapers. For more in-depth information, see *IBC/Donoghue's* weekly and annual reports, which tracks the performance and portfolio holdings of 750 money market mutual funds. Current and historical quotes are also available in on-line services such as AOL, YAHOO, and MSN.

How do closed-end funds work?

Closed-end funds have features similar to both mutual funds and common stocks. They do differ from open-end funds in two ways: First, they operate with a fixed number of shares outstanding, which trade among individuals in secondary markets like common stocks. That is, if you wish to invest in a closed-end fund, you must purchase shares from someone willing to sell them. In the same manner, in order to sell shares you must locate a buyer. Transactions involving closed-end mutual funds are easy to arrange, however, since most of these funds are traded on the New York Stock Exchange, American Stock Exchange or the over-the-counter market. Second, the price of a closed-end fund is based on a demand/supply relationship because the shares are traded on the stock exchange. New shares are not issued. Therefore, the net asset value of the fund may

be more or less than its current market price of stock. A major point of closed-end funds is the size of *discount* or *premium*. Many funds of this type sell at discounts, which enhances their investment appeal.

When the market price is above its NAV, it is said to be selling at a premium; when market price is below the NAV, it is selling at a discount. A number of publications such as the *Wall Street Journal* and *Barron's* report the share premiums or discounts of closed-end funds.

What are the advantages and disadvantages of closed-end funds?

Advantages are:

1. Professional management
2. Diversification
3. The opportunity to buy at a discount.

Note: Closed-end funds are well suited for income investors and those seeking international diversification.

Disadvantages are:

1. High management fees, ranging from 1/2% to 1 1/2%.
2. Brokerage commissions vary widely. *Note:* Negotiate or use a discount broker if you can.

Note: You may examine the trend in *Herzfeld Closed-End Average*, which tracks 20 closed-end mutual funds accounting for about 50% of the value of all the funds traded on the exchanges. It is published in *Barron's*. An upward trend is a positive sign in a bullish market.

Sources of information and on-line services for closed-end funds

In addition to the *Wall Street Journal* and *Barron's*, current and historical data are provided in the following publications:

1. *Morningstar Closed-End Funds*, Morningstar Inc., (800) 876-5005.
2. *S&P Stock Reports and S&P Stock Guide*, Standard & Poor's Corp. (212) 208-8800
3. *The Complete Guide to Closed-End Funds*, International Publishing Corp. (800) 488-4149.

Current and historical quotes are also available in on-line services such as *AOL*, *CompuServe*, *Dow Jones News/Retrieval*, and *Telescan Analyzer*.

How do you determine if hedge funds are right for you?

Hedge funds, usually used by wealthy individuals and institutions, are allowed to use aggressive strategies that are unavailable to mutual funds, including selling short, leverage, program trading, swaps, arbitrage, and derivatives. Hedge funds are exempt from many of the rules and regulations governing other mutual funds, which allows them to accomplish aggressive investing goals. They are restricted by law to no more than 100 investors per fund, and as a result most hedge funds set extremely high minimum investment amounts, ranging anywhere from \$250,000 to over \$1 million. As with traditional mutual funds, investors in hedge funds pay a management fee; however, hedge funds also collect a percentage of the profits (usually 20%). Here are some tips on determining if hedge funds are right for you.

- 1. Do you have the time?** These funds require an investment of time. Generally, a minimum of 15 to 20 hedge funds with a low correlation to one another is recommended to provide an **investor with sufficient diversification**.
- 2. Can you put in the effort?** Diversification in multiple funds, with low correlations to each other, is required to offset risks involved with these types of funds. Individuals have to put in additional effort tracking and managing their portfolio.
- 3. Can you develop the expertise?** There are four major sectors for hedge funds that profit from different types of investment strategies: Long-short equity funds combine long and short stock portfolios; event-driven funds seek favorable investment opportunities that will be triggered by significant corporate events; global macro funds attempt to profit from changes in the global currency, commodity, equity and bond markets; and relative value funds seek to capitalize on discrepancies between equities, bonds, options or futures, and other types of investments.
- 4. Do you have the money?** It can be costly to gain entry into the most highly regarded hedge funds because the minimum investments for those funds can be excessive.
- 5. No time, effort, expertise or money?** You may want to look into a fund of hedge funds. This is a diversified portfolio of generally low-correlated hedge funds, selected and overseen by a professional manager.

Tax tips with mutual funds

Unless you are investing in a tax-deferred IRA or a tax-free bond fund, the capital gains from mutual fund investing are taxable. Capital gains distributions usually come once during the year, typically in December. If you purchase shares right before a distribution,

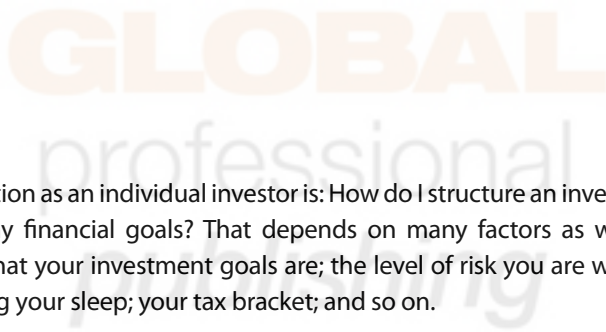
you can be caught in a tax bind. A portion of the price you paid will be returned to you as a taxable gain. In general, a fund that turns over securities frequently in pursuit of a high return may generate more taxable gains than one that holds onto securities that are climbing in value. For this reason, *Consumer reports* has recently added to their Ratings a new column "tax efficiency." Here are some tax tips in connection with mutual fund investing.

1. Never buy shares of a mutual fund late in the year without going over its distribution, or "ex-dividend," date.
2. Try to sell the shares with the highest original cost.
3. Check out tax consequences when you have to move your money from one fund to another. Such switches are viewed as a taxable event by the IRS.
4. Use the tax efficiency as an added screening device. Try to pick the one showing the highest tax efficiency.

Note: When picking stock funds, favor index mutual funds, exchange-traded index funds, and tax-managed funds, which don't distribute a lot of short-term capital gains.



Diversification, Portfolio Construction, and Asset Allocation



The key question as an individual investor is: How do I structure an investment portfolio to achieve my financial goals? That depends on many factors as was discussed in Chapter 1: what your investment goals are; the level of risk you are willing to assume without losing your sleep; your tax bracket; and so on.

Diversification is the key

No matter what your goal, proper diversification—allocating investment assets among different types of investments in order to balance risk and return—is a major element of structuring a successful portfolio, as illustrated in Figure 14.1. *Note:* A feasible portfolio that offers the highest expected return for a given risk or the least risk for a given expected return is called an *efficient portfolio*.

How to allocate assets with mutual funds

Asset allocation measures the weighing of various types of investments in a portfolio. Undoubtedly, one of the best ways to allocate assets is with mutual funds. Further,

allocating assets among several types of mutual funds may be an even better way to go. Different segments of the market react differently to the same economic conditions. For example, a cut in interest rates may lower yields on your bond funds, but that news could spark a rally in stocks that would benefit your stock funds. A poor economy that tends to depress the domestic markets may be offset by diversifying in international funds. Spreading your investment money among a family of funds is strongly recommended. More specifically,

1. Diversify among different classes of investments—for example, cash and cash equivalents (such as money market funds), stock funds, bond funds, etc.
2. Diversify within each class of funds—for example, small company stock funds, large company stock funds, sector funds, international funds, etc.
3. Go on even further—for example, tax-exempt funds, taxable funds, etc.

Investing in an asset allocation fund

As an alternative to constructing your own portfolio, many mutual fund companies offer a variety of *asset allocation funds*. An asset allocation fund is a mutual fund seeking to reduce risk by investing in the right securities at the right time. These funds stress consistent performance at the expense of spectacular gains.

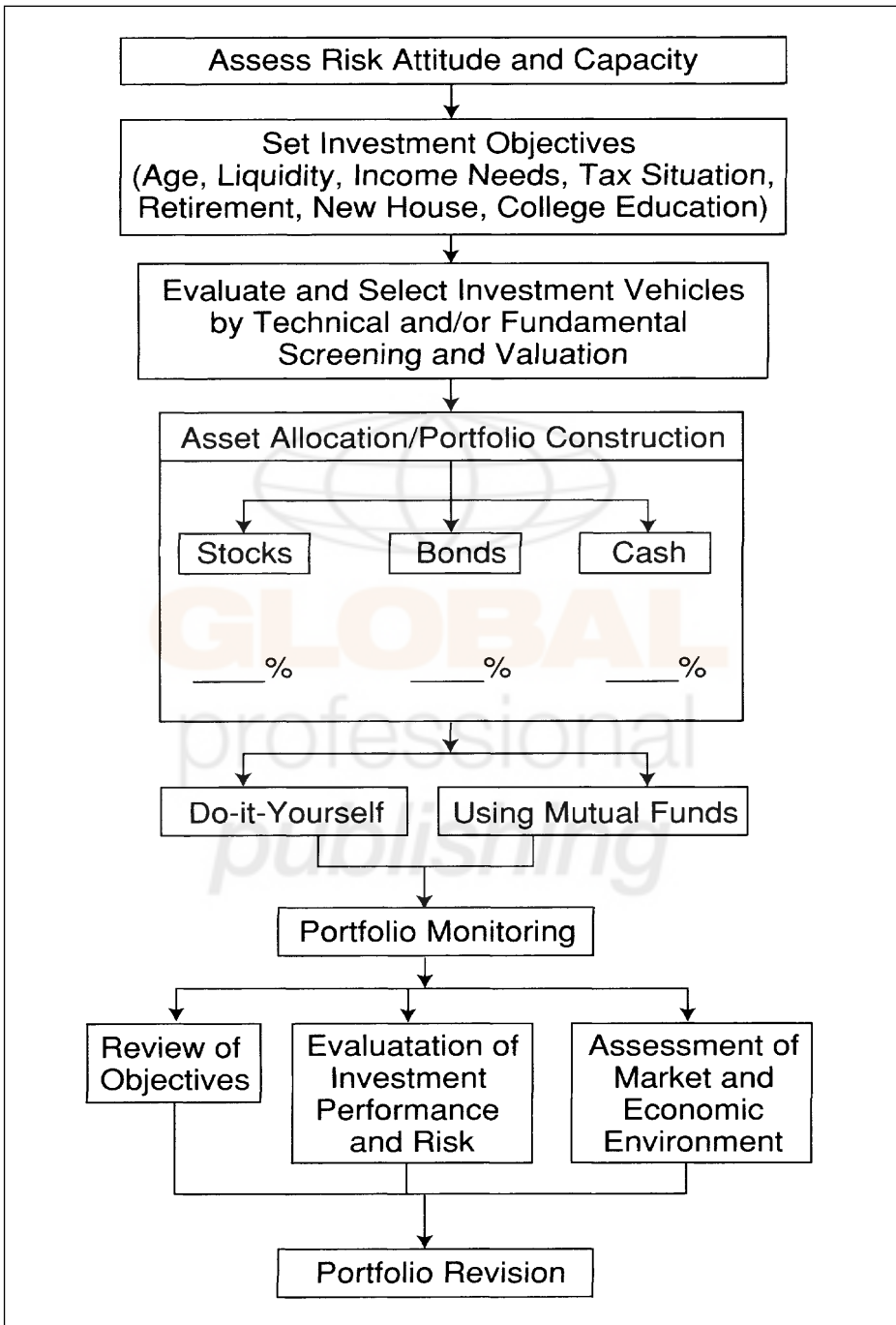
Some funds such as Vanguard's Star Fund use fixed weightings, while others such as Fidelity's Asset Manager have flexible weights that are altered within pre-defined limits. In fact, Fidelity offers several asset allocation funds designed for various investment objectives (i.e., Fidelity Asset Manager, Asset Manager-Growth, and Asset Manager-Income.).

What is a do-it-yourself portfolio construction?

A do-it-yourself portfolio construction is a difficult task. Asset allocation, a time-tested approach to portfolio management, distributes funds within your portfolio among several asset categories or classes, typically cash and cash-equivalents (investments with maturities of less than one year such as CDs or money market funds), equities (stocks and stock funds), and fixed income securities (bonds and bond funds). Stock market diversification is also critical, such as spreading your money across broad sectors; large-company stocks, small-company stocks, and foreign stocks.

This mix of instruments is based on your financial goals, resources, total return (yield plus price change), and the level of tolerance of risk. The highly personalized process of asset allocation first takes into account each of your unique investment

Figure 14.1: A systematic approach to portfolio construction



needs and objectives, earnings ability, and the financial resources you have available to meet them. Also, your age may be a big factor. For example,

- ▶ Do you need to build funds for retirement or a child's college education?
- ▶ Is reducing your tax liability a priority?
- ▶ Do you need to generate current income (or yield) or need funds soon or at some point in the future? Which one is more important to you, current income or capital appreciation?

Answers to these questions will determine whether your portfolio should be split among the following three classes of investment vehicles:

1. *Liquidity investments*. These investments are liquid enough to be turned into cash as needed with minimum risk or penalty (for example, short-term CDs, money market funds, money market deposit accounts).
2. *Income investments*. These have the ability to provide present and/or future income. For example, various corporate bonds and tax-free municipal bonds, fixed annuities providing tax-deferred future income, and U.S. Savings bonds fall in this category.
3. *Growth investments*. These are intended to appreciate in value over a given period of time (for example, growth stocks, stock funds, and variable annuities).

Asset allocation must take into account your risk comfort level. You should ask yourself: Am I conservative, moderate, or aggressive? Where is your sleeping point? (In other words, would you want to eat well or sleep well?)

One approach is based on the investor's time frame. Longer-term portfolios permit investors to assume additional risk. The investor can increase the amount invested in stocks, precious metals, etc. Changes in asset mix would have to be made as the investor's time horizon decreases or as gains or losses alter the portfolio's composition.

Another approach is to time changes in asset allocation to market changes, preferably in step with market cycles. In bull markets, investors desire to be heavily into stocks, for instance. In bear markets, cash, bond, or precious metal allocations would be high. There is controversy over whether investors can profitably time the market waves.

How do you calculate your allocation mix?

To determine asset allocation mix, you can add holdings of stocks, bonds, and cash, and divide each sum by the total value of the portfolio. However, in today's complex investment world, determining what asset class certain investments belong to can be confusing. You will have to give some thought to how you allocate mixed investments

such as balanced mutual funds that own both stocks and bonds or how to treat convertible securities, which are half-bond and half-stock.

The calculation can be done by hand or by using a spreadsheet software program. Personal finance software such as *Meca's Managing Your Money* can also help. Fidelity has developed *Fidelity PortfolioMatch*, a guidebook that provides a defined process for evaluating your existing investment, as well as action steps tailored to your individual needs.

A grid serves as an easy way to calculate asset allocation. Figure 14.2 provides a filled out grid as an example and a blank grid for your own use.

Figure 14.2: Asset allocation grids

INVESTMENT	(A) AMOUNT	(B) %STOCK	(C) % BOND	(D) % CASH	\$\$ IN STOCK (A*B)	\$\$ IN BONDS (A*C)	\$\$ IN CASH (A*D)
BLT common	\$10,000	100%	0	0	\$10,000	0	0
Jaytown Balanced Fund	\$15,000	60%	30%	10%	\$9,000	\$4,500	\$1,500
Certificate of deposit	\$,8,000	0	0	100%	0	0	\$8,000
Burgh Water District bond	\$5,000	0	100%	0	0	\$5,000	0
TOTAL	(E) \$38,000				(F) \$19,000	(G) \$9,500	(H) \$9,500
ASSET ALLOCATION					(F÷E) 50%	(G÷E) 25%	(H÷E) 25%

For you to do your own:

INVESTMENT	(A) AMOUNT	(B) %STOCK	(C) % BOND	(D) % CASH	\$\$ IN STOCK (A*B)	\$\$ IN BONDS (A*C)	\$\$ IN CASH (A*D)
TOTAL	(E)				(F)	(G)	(H)
ASSET ALLOCATION					(F÷E) %	(G÷E) %	(H÷E) %

How do you fine-tune your asset mix?

The beauty of asset allocation is that as factors such as your financial circumstances and goals and your age change, your allocations can change as well. What are four reasons for fine-tuning or rebalancing your asset mix? They are:

1. When there are external events, such as stock market correction or low yields that have thrown off your original target allocation.
2. When you experience a major life event (such as having a child, losing a spouse, getting married, or retiring) that alters your investment goals.
3. When the weight of one investment class in your portfolio surges or shrinks significantly.
4. When you are within a year or so of achieving your particular goal.

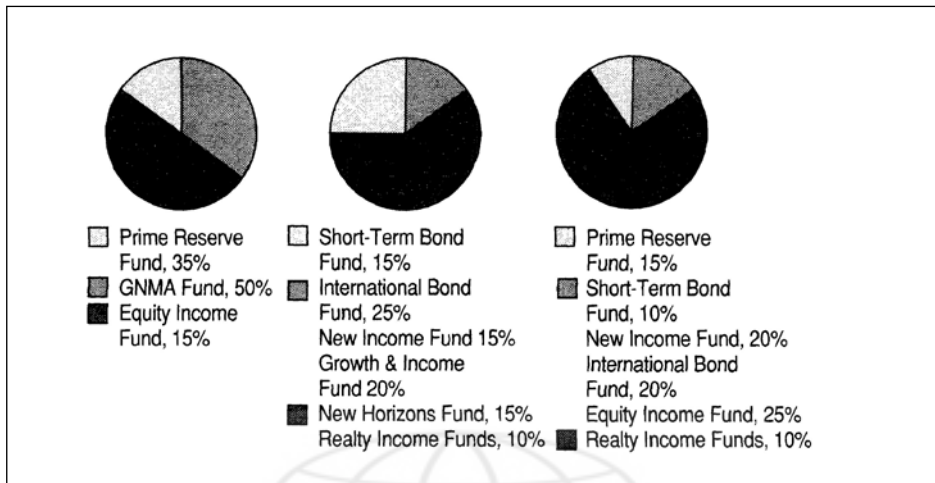
Note: If you intend to rebalance your asset mix too often, consider sticking with mutual funds that have no front- and back-end loads.

Can you obtain help for constructing an asset allocation portfolio?

There are a number of sources that can be referred to when trying to construct a portfolio, including the following:

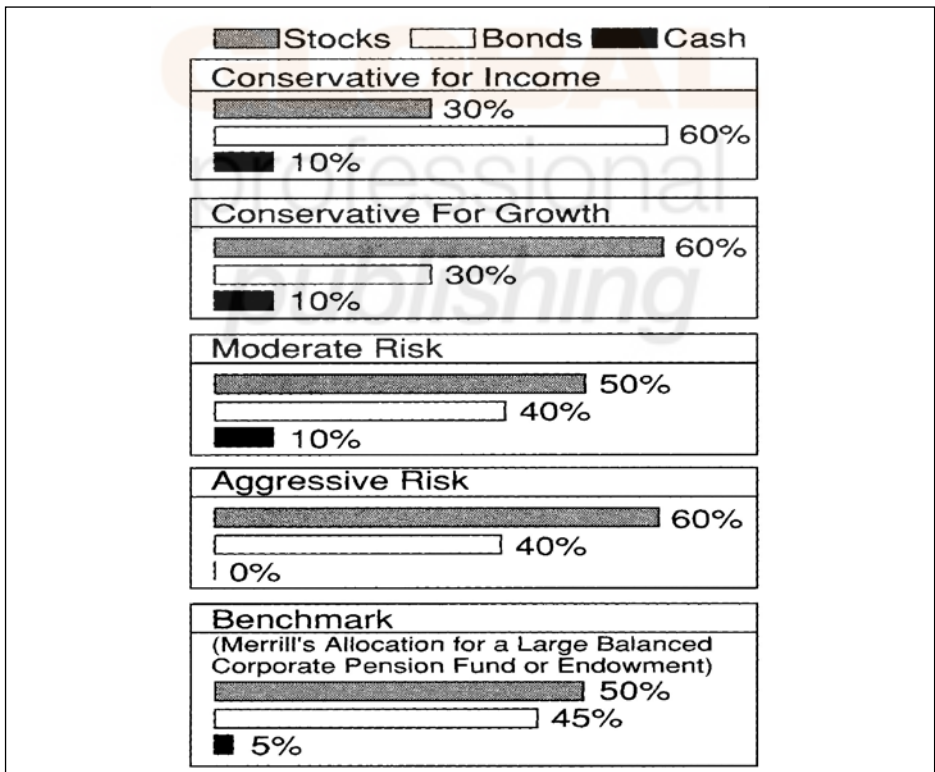
1. Most major brokerages maintain a recommended asset allocation (or model portfolio) that is updated to keep with the investment climate (see Figures 14.3 and 14.4). It will tell you how much you should have in each sector of the economy.
2. Each quarter the *Wall Street Journal* tracks Wall Street firms' recommendations of asset allocation.
3. In addition, many market newsletters and money management firms also tell investors what they believe are good allocations for the times.

Figure 14.3: T. Rowe price portfolio suggestions



Source: T. Rowe Price.

Figure 14.4: Merrill Lynch asset allocation recommendations



Source: Merrill Lynch.

5. Surveys by organizations such as *Money* magazine, and *American Association of Individual Investors* give you some idea of what other investors are doing.

How can you use beta for asset allocation?

You can construct and/or adjust your own portfolio, based on beta coefficients. If you desire higher returns and high risk, you would select securities with higher betas (or at least mix high and low beta securities such that the overall beta is higher than 1.0). The beta of a portfolio can be estimated by weighting the individual securities that comprise the portfolio. Table 14.1 illustrates the calculation of a portfolio's beta. Recall that the basic equation for the CAPM is

$$r_j = r_f + b(r_m - r_f)$$

In words,

Expected return = risk-free rate + beta x (market risk premium)

where r_j = the expected (or required) return on security j ; r_f = the risk-free rate on a security such as a T-bill; r_m = the expected return on the market portfolio (such as Standard and Poor's 500 Stock Composite Index or Dow Jones 30 Industrials); and b = beta, an index of systematic (nondiversifiable, noncontrollable) risk.

Table 14.1: Calculation of a portfolio's beta

Stock	Beta	Percent of Portfolio (%)	Portfolio Beta
Coca-Cola	1.10	30%	.33
Calif. Water	.50	20	.10
Liz Clairborne	1.50	<u>50</u>	<u>.75</u>
		<u>100%</u>	<u>1.18</u>

The beta of this portfolio is 1.18.

Adding a security with a high beta will increase the portfolio's beta, while adding a low beta stock will reduce the portfolio's risk. The higher the beta or risk, the higher the return expected from the portfolio. Thus, to get a higher long-run rate of return you should just increase the beta of your portfolio.

Life-cycle guide: Recommended asset allocation

Investment strategy must be tailored to a life cycle. It depends to a large extent on the following factors:

1. How capable an individual is of bearing risk and his/her attitude toward risk. Do you have a stomach for risk? How much loss can you take? What is your sleeping point? Some people just can't sleep at night knowing their assets might take a dip, no matter how small.
2. Income needs and desire for growth. A retiree or someone close to retirement might look for a steady income, while younger people might afford to have a luxury for long-term growth. There is also a trade-off between income and growth.
3. Time horizon. By and large, longer time horizons allow you to take on greater risks--with a greater return potential--because it will increase the capacity to take risk. As retirement approaches, a large percentage of assets needs to be shifted into more conservative, less risky investments. *One rule of thumb:* Subtract your age from 100 and that is the percentage that stocks should account for in your portfolio.
4. Tax exposure. The bottom line to every investor is not how much you earn, but how much you keep - what's left after taxes. Investors who are in higher income tax brackets need to be concerned with the tax implications of their investments. Table 14.2 provides a capsule summary of the four elements of the individual investment profile, while Table 14.3 shows how an investor's profile may change with age in life, given the assumptions: (1) everybody is essentially risk averse, and (2) the younger have more capacity for risk than the older. Of course, your own profile may be very different than this one. Table 14.4 is a suggested allocation mix.

Table 14.2: Individual investment profile

ELEMENTS	DEGREE/LEVEL	INVESTMENT VEHICLES IDENTIFIED WITH EACH CATEGORY
Risk Tolerance	Low (0-5% loss)	Cash, CDs, Money market funds
	Moderate (6-15%)	Conservative high-dividend stocks, bonds
	High (16-25%)	Growth stocks

Income Needs	Income	Bonds, preferred stocks
	Growth/Income	Growth/income funds, high-dividend stocks
	Growth	Growth stocks
Time/age factor	Short (1-2 years)	Cash, CDs, money market funds, short-term bonds
	Medium (3-5 years)	Intermediate-term bonds, growth stocks
	Long (over 5 years)	Aggressive growth stocks
Tax exposure	Low	Bonds and other fixed income securities
	Moderate	High-dividend stocks, preferred stocks
	High	Municipal bonds, nondividend-paying growth stocks

Table 14.3: Life cycle investing: An example of a changing profile

	20S	30S	40S-50S	60S
Risk Tolerance	High	High	Moderate	Low
Return Needs	Growth	Growth	Growth/ Income	Income
Time Horizon	Long	Long	Short/Long	Short/Long
Tax Exposure	Lower	Higher	Lower	Lower

Table 14.4: Suggested asset mix

	20S	30S	MIDLIFE	60S
Money Market Funds	5%	5%	5%	10%
Bond funds	25%	35%	45%	60%
Zero-coupon T-bonds				
High grade				
Stock funds				
Growth	70%	60%	50%	30%
Income				
Income & growth				

How your family situation affects your financial goals and investment conditions?

In addition to your age, your family situation would dictate investment goals and strategies. Table 14.5 provides some general conditions of typical goals at various family situations.

Table 14.5

	FAMILY SITUATION	TYPICAL FINANCIAL GOALS	CONDITIONS
1.	Young, single working	To start a business; to buy an auto	<ul style="list-style-type: none"> Stress on capital growth No great need for liquidity Time-horizon, 3-5 years Capacity for substantial risk
2.	Young couple, with no children	To buy a house	<ul style="list-style-type: none"> Similar to Situation 1
3.	Young couple, with two children	For a college education fund	<ul style="list-style-type: none"> Similar to Situation 1 Time-horizon, 10-15 years Moderate risk Preferred

4.	Middle-aged married couple with no children	For retirement fund	<ul style="list-style-type: none"> • Balance between growth and income • Moderate risk preferred • Time-horizon, 5-10 years
5.	Divorced mother, working, with children	To supplement income	<ul style="list-style-type: none"> • Similar to Situation 4 • Low risk Preferred
6.	Married couple in retirement	To supplement retirement	<ul style="list-style-type: none"> • Stress on preservation of capital • Need for liquidity and current income • Low risk

Note: There is an array of portfolio management tools available online, free or for a fee. Most measure a person's appetite for risk, help set goals and then churn out an ideal portfolio. The results range from simple pie charts, showing what asset classes are suitable, to full-fledged advice telling which stocks, mutual funds, and other financial instruments to buy and sell. Examples are Financial Engines Inc (www.financialengines.com),

mPower.com Inc. (www.money.masn.com/retire/planner.asp), and *Morningstar Inc.* (www.morningstar.com).

Glossary

AAII: American Association of Individual Investors

All-Or-Nothing Order: A type of order for the purchase of stock or options which specifies that the full quantity of your order be filled, or else none of it.

Advisory Letters: Specialized newsletters on investment media usually costing a lot.

Aggressive Growth Fund: Or, *maximum capital gain, capital appreciation, or small-company growth fund*; type of mutual fund assuming greater risk so as to obtain maximum appreciation (rather than dividend income). It essentially invests in the stocks of beginning, and high-tech firms. Return can be great but so can risk.

Alpha: A measure of risk-adjusted return of a mutual fund. It is the difference between the fund's actual performance and its anticipated performance in light of market risk (beta) and the market's behavior.

American Depository Receipts (ADRs): Foreign company securities traded in the U.S. markets. They are similar to common stock, as each one constitutes a specific number of shares in a given foreign firm.

American Stock Exchange (AMEX) Market Value Index: An unweighted index of the *American Stock Exchange (AMEX)* stocks. It is calculated by adding all of the plus net changes and minus net changes above or below previous closing prices. The sum is divided by the number of issues listed and the result is added to or subtracted from the prior close. It is more like an average than an index since there is no base period.

Analytical Information: Information used with forecasts and recommendations concerning potential investments.

Annual Report: A glossy magazine-style report prepared each year by a company to its stockholders. The annual report shows the president's letter, management's discussion of operations, balance sheet, income statement, statement of cash flows, footnotes, and the audit report.

Ask Price: Or *Offer Price*. The lowest price a dealer will sell a security to an investor.

Asset: Financial resources expected to generate benefits to a person, company, or an institution. Examples of assets are land, securities, equipment, and inventory.

Asset Allocation: Percent of the fund in cash, fixed income securities and common stocks.

At-The-Money: Term used when the striking price of an option is equal to the price of the underlying stock.

Automated Clearing House (ACH): A bank network that allows participating banks to send and receive funds electronically.

Averages: Numbers used to measure the general behavior of security prices by considering the arithmetic average price behavior of a typical group of securities for a specified time period.

Back-End Load: Or, *Deferred Sales Charges*. A fee assessed for redeeming mutual fund shares. These charges discourage constant trading in the fund.

Baby Bond: Bond with less than \$1,000 par (face) value.

Balance Sheet: A statement showing the nature and amount of a company's assets, debt and stockholders' equity at a specified date. The balance sheet indicates what the firm owns, owes, and the net worth.

Balanced (Mutual) Fund: A mutual fund combining investments in common stock, preferred stock, and bonds. It attempts to generate income and capital appreciation. Balanced funds underperform all-stock funds in markets of increasing prices.

Bargain Hunters: Investors looking to buy shares at reduced prices in a period of market decline.

Barron's: A weekly publication by Dow Jones containing stories on specific companies and industries as well as data on the financial markets.

Basis Point: A unit of measure for the change in interest rates for bonds and notes. One basis point is equal to 1/100th of a percent, that is, 0.01 percent. Thus 100 basis points is equal to 1 percent. For example, an increase in a bond's yield from 6.0% to 6.5% is a rise of 50 basis points.

Bear: Someone who thinks the market will decline.

Bear Market: When security prices decline; the bear's claws point down.

Bearer Bond: A bond which does not have the owner's name recorded; its coupons can be clipped and cashed by any holder.

Bearish: The anticipation of a decline in the price of a stock or the overall market.

Benchmark: An index or fund average used in fund reports to compare performance. Benchmarks include the *S&P 500 Stock Index*, *Europe, Austria, and Far East (EAFE) Index*, and Lipper Averages or Indexes.

Beta: A measure of systematic (nondiversifiable) risk. It reveals how the price of a security or a mutual fund reacts to market forces. The market has a beta of 1. The higher the beta, the riskier the security or fund.

Bid and Asked: Also called a quotation or quote. The bid is the highest price anyone has declared that he wants to pay for a security at a particular time; the asked is the lowest price anyone will take at the same time.

Big Board: *New York Stock Exchange*.

Black Monday: Refers to the October 19, 1987 plunge that saw the *Dow Jones Industrial Average* fall a record 22.6 percent. (See also Great Crash).

Blue Chip: A stock of a high quality, financially sound company; blue chips in poker are worth more than red or white chips.

Bond: A debt obligation of a company, municipality, or government, stated at a specified interest rate and a maturity date.

Bond Funds: Mutual funds investing mostly in bonds so as to generate current income.

Bond Ratings: Letter grades of the quality of a bond.

Bond Yield: Effective rate of interest earned on a bond taking into account the nominal interest and any discount or premium.

Book: A record kept by the specialist in a security of buy and sell orders at stated prices, in sequence of receipt, which are left with him by other brokers.

Book-Entry Bond: No certificate is issued, but a computerized record of ownership is kept.

Book Value: The net assets (assets minus liabilities) divided by the number of common shares outstanding. Book value may be substantially different from market value.

Broker: An agent who executes buy and sell orders of stocks, bonds, etc. For this service a commission is charged.

Bull: A person expecting increasing security prices.

Bull Market: A period of increasing prices; the bull's horns thrust upward.

Bullish: The anticipation of increasing prices of a specific stock or the overall market.

Business Cycle: An indication of the present economic state. It is the fluctuation in economic activity.

Call: The right to purchase 100 shares of a particular stock at a set price per share (the exercise price) for a specified time period (until expiration).

Callable: A bond or preferred stock redeemable by the issuing company.

Capital Gain or Capital Loss: Profit or loss from selling a capital asset. It may be either short-term (one year or less) or long-term (more than one year).

Capital Gains Distribution: Income for investors arising from net long-term profits of a mutual fund realized when portfolio securities are sold at a gain. The gains are distributed by fund managers to shareholders at least yearly.

Capital Stock: Ownership shares in a company including common and preferred stock.

Capital Market: The long-term financial market in which long-term securities (e.g., stocks and bonds) are bought and sold.

Capitalization: Total amount of the different types of securities issued by a company such as common stock and bonds. Bonds are typically stated on the books of the issuing company at face value. Common and preferred shares are stated at par value.

Cash Flow: (1) Net income plus noncash expenses (e.g., depreciation) less noncash revenue (e.g., amortization of deferred revenue) equals cash flow from operations. (2) Cash receipts less cash payments.

Certificate of Deposit (CD): A term account offering higher interest than passbook or other savings accounts. There is a penalty for early withdrawal.

Chicago Board Options Exchange (CBOE): Organized national market where foreign currency, index, and interest rate options are traded by members for their own and customer accounts.

Chicago Board of Trade (CBT): Exchange that trades commodity futures and futures options.

Circuit Breakers: A post-1987-crash system of rules to temporarily halt trading of stocks and futures contracts when prices plummet. (*See also* Black Monday).

Commodity Futures Trading Commission (CTFC): Federal agency regulating commodities traded in organized contract markets.

Closed-End Mutual Fund: A mutual fund operating with a fixed number of outstanding shares.

Chicago Mercantile Exchange (CME): Trades futures contracts in commodities and options.

Churning: Practice by a broker to make frequent buy and sell trades in an account without benefiting the investor. It is unethical and illegal.

Collateral: Securities or other assets pledged by a borrower to obtain a loan.

Closing Tick: The difference between the number of companies whose last trade of the day was on a down tick from those closing trades which were on an up tick. (*See also* Tick).

Commission: The broker's fee to purchase and sell securities for an investor.

Commodity Exchange, Inc. (COMEX): Trades futures and futures options and is located in the Commodity Exchange Center of New York City.

Common Stock: Securities representing an equity interest in a company. If the firm has also issued preferred shares, both common and preferred have ownership rights, but the preferred usually has prior claim on dividends and in bankruptcy, assets. Stockholders come after bondholders or other creditors of the business.

Compounding: The process of earning interest on the interest already accumulated.

Computerized Program Trading: A computer-run strategy enabling big institutional investors to make lightening-quick trades of huge amounts of stocks, stock index futures and options on index futures in attempts to profit from price disparities.

Consolidated Balance Sheet: A balance sheet presenting the financial position of a parent and one or more subsidiaries.

Consolidated Income Statement: An income statement detailing a company's revenue, expenses and profit or loss for a given period. It includes all of the company's operations and subsidiaries.

Contingencies: In an annual report, a section that discusses claims and litigations against the company and assesses whether they would have a significant impact on finances or operations.

Convertible: A bond or preferred share which may be converted by the owner for common stock or another security, typically of the same company, in conformity with the terms of the issue.

Correction: A reverse movement, usually downward, in the price of an individual stock, bond, commodity, or index.

Cost Basis: The price paid for an investment. This is used to compute capital gains or losses when shares are sold.

Coupon Bond: A bearer bond in which interest payments are made when the coupons attached to the bond are presented to the paying agent.

Covered Options: Options written against stock owned.

Credit Rating: An assessment of a bond's quality as determined by a rating agency such as Moody's or Standard & Poor's.

Credit Risk: The risk of a bond that its issuer will default on interest or principal payments.

Cumulative Preferred: A stock with a provision that if dividends are omitted, the omitted dividends must be paid before dividends may be paid to common stockholders.

Curb Exchange: Former name of the American Stock Exchange, second largest U.S. exchange. The term comes from the market's origin on the streets of downtown New York.

Currency Futures: Futures contracts on foreign currencies.

Current Exchange Risk: The risk that the return on an international security would be negatively affected by a change in the value of a currency relative to the foreign currency. For example, a weak dollar would boost the security's return to U.S. investors, while a strong dollar would lower its return.

Currency Options: Call and put options written on foreign currencies.

Current Yield: Current income an investment provides compared to the prevailing market price.

Custodian: The bank or trust company that maintains a mutual fund's assets, including

its portfolio of securities or some record of them. It provides safekeeping of securities but has no role in portfolio management.

Cyber Investing: Investing such as on-line trading on the Internet.

Cyclical Stock: A stock that varies in market price with changes in economy. It increases in price during an upturn in business conditions and decreases in price during downturns.

Dealer: A buyer and seller of securities who keeps an inventory of the issues traded in. It differs from the broker who serves as the buyer's or seller's representative for a fee.

Debenture: A promissory note secured by the general credit and assets of a company and typically not backed by a collateral or lien on specific assets.

Default Risk: See credit risk.

Defensive Stock: A stock fairly constant in price during business downturns and upturns.

Delivery: Transfer of securities from buyer to seller. The certificate shows shares purchased "regular way" on the New York Stock Exchange usually delivered to the buyer's broker on the third business day after the transaction.

Descriptive Information: Factual information on the prior behavior of the economy, stock market, industry, or some investment instrument.

Discount: A security selling for below its face or par value.

Discount Broker: A stock broker charging a low fee and not furnishing investment advice.

Discount Rate: The interest rate charged to banks for loans by the Federal Reserve Bank.

Discretionary Account: A customer giving his broker the right to use his judgment in buying and selling securities.

Distribution: (1) A payment of dividends or capital gains to shareholders. (2) A redemption from a retirement account. (3) Selling over a period of time of a large block of securities without unduly lowering the market price.

Dividend Reinvestment: Dividends that an investor reinvests in the company or mutual fund by buying additional shares. A mutual fund does not assess a sales commission on reinvested dividends.

Dollar-Cost Averaging: The technique of investing a fixed sum at regular intervals regardless of stock market movements. This reduces average share costs to the investor, who acquires more shares in periods of lower prices and fewer shares in periods of higher prices. In this way, investment risk is spread over time.

Dow Jones Bond Averages: Mathematical averages of ending prices for categories of utility, industrial, and corporate bonds.

Dow Jones Industrial Average (DJIA): A stock average of 30 blue chip industrial stocks chosen for total market value and overall public ownership and considered to depict broad market activity.

Diversification: Spreading investments among different companies in different industries. Diversification exists by owning securities of many companies having negative or no correlation.

Dividend: The payment approved by the Board of Directors to be distributed proportionally based on the shares outstanding.

Dividend Yield: Dividends per share divided by either market price per share or initial cost per share. It is used by an investor as a return measure.

Dow Theory: A way of evaluating market trends by identifying the movement of the Dow-Jones industrial and transportation averages. A bull market is presumed to continue as long as one average makes new highs which are “confirmed” by the other. A reversal is indicated when one average refuses to confirm the other; a bear market is presumed to continue as long as one average makes new lows which are confirmed by the other.

Downtick: Or, *Minus Tick*. A transaction of securities executed at a price below that in the preceding transaction. For example, if a stock has been selling at \$23 per share, the next transaction is a downtick if it is at \$22 1/8.

Duration: The number of years a bond takes to recover its investment. It is widely regarded as a more accurate measure of maturity of a bond since it considers the effect of rate changes on the security's price. It is used as a gauge of a bond or bond portfolio's interest rate risk.

EAFE Index: More exactly, Morgan Stanley Capital International Europe, Austria, and Far East Index. It is a market-weighted index composed on 1,041 companies representing the stock markets of Europe, New Zealand, and the Far East.

Earnings Per Share (EPS): Net income divided by outstanding common shares.

ETFs: Mutual funds that change hands all day long on an exchange, just like stocks -- which is very different from the once-a-day trading of ordinary mutual funds.

Equipment Trust Certificate: A type of security to pay for equipment. Title to the asset is held by a trustee until the notes are paid. It is a lien on the property.

Equity: (1) The ownership interest of stockholders. (2) Excess value of securities over the debit balance in a margin account.

Equity REIT: A type of REIT buying a portfolio of specific properties to generate both current income and capital gains.

Exchange Privilege: Or, *Switching Privilege*. The right to transfer from one mutual fund to another, generally within the same fund family, at little or no cost.

Ex-dividend: A synonym for "without dividend." Stocks have record dates for the payment of dividends and interest. The New York Stock Exchange establishes dates a few days before the transfer of the stock. Investors who purchase stocks by this date receive this dividend; investors who purchase after it do not.

Exercise: Meeting the provisions of the option contract. The number of shares of the underlying stock are purchased or sold at the price stated in the option contract.

Exit Fees: Or, *Redemption Fees*. Charges to redeem mutual fund shares irrespective of the time period the investor owned the shares.

Expense Ratio: The ratio of total expenses (such as management fees and other administrative expenses) to net assets of the mutual fund. The ratio is listed in the fund's prospectus.

Expiration: The day the option contract expires unless previously exercised. All option contracts expire on the Saturday after the third Friday of the expiration month.

Ex-Rights: Without the rights.

Extra: "Extra dividend" beyond the regular dividend which may be in cash or stock.

Face Value: The amount of the promise to pay shown on the face of a bond.

Family of Funds: A group of mutual funds, each having different investment objectives, which are under the same management company. A shareholder can transfer between the funds, sometimes at no charge as his investment objectives change.

Federal National Mortgage Association (FNMA): Also known as Fannie Mae. A government-sponsored corporation that buys and sells FHA, FHDA or VA mortgages.

Financial crisis:

- (1) A situation in which the supply of money is outpaced by the demand for money. This means that liquidity is quickly evaporated because available money is withdrawn from banks (called a run), forcing banks either to sell other investments to make up for the shortfall or to collapse.
- (2) The global financial crisis of 2008–2009 emerged in September 2008 with the failure, merger, or conservatorship of several large U.S.-based financial institutions, such as investment banks, insurance firms, and mortgage banks, consequent to the subprime mortgage crisis and spread with the insolvency of additional companies, governments in Europe, recession, and declining stock market prices around the globe.

Financial Highlight: Usually the third page of an annual report. It is a table containing the sales, net income or loss, and earnings per share (EPS). Many of these tables contain percentage changes from previous years.

Financial Information Services: Services providing historical, financial, market and economic data, and current stock market prices and financial news. Information is obtained by accessing an on-line database.

Financial Futures: Futures contracts in which the underlying commodities are financial assets. Examples are debt securities, foreign currencies, or market baskets of common stocks.

Financial Planner: A person having expertise in providing personal financial planning services to individuals. He may be an independent professional (e.g., CPA) or may be associated with a large investment, insurance, or other institution.

Fiscal Year: A company's accounting year other than Jan. 1 through Dec. 31. An example is July 1 to June 30.

Fixed Charges: Constant expenses such as bond interest, taxes, and royalties, which a business must incur regardless of profitability.

Fixed Income Securities: Investments providing a fixed periodic return such as debt securities like bonds paying semiannual interest.

Form 10-K: A report filed with the *Securities and Exchange Commission (SEC)* once a year by every company that has more than 500 shareholders, has stock traded on a public exchange, or has issued a registered security such as a stock or bond. The 10-K discloses sales, profits and losses for the past five years and other significant information. All data must be audited by an independent accounting firm.

Front-End Load: Initial sales charge at the date of the purchase of mutual funds. Administration and management fees are charged annually regardless of a fund being a front-end load, back-end load (12b-1), or no-load.

Full Service Brokerage House: A brokerage house that provides research reports, investment advice, and a broker to act as a sounding board for ideas.

Fundamental Analysis: The evaluation of a company's financial statements including footnotes.

Funds from Operations (FFOs) Net income plus depreciation and before any extraordinary items. It is a measure of cash flow used to value *real estate investment trusts (REITs)*. This measure is not currently audited or recognized by *Generally Accepted Accounting Principles (GAPP)*.

Futures Contract: A contract to deliver a specified amount of an item by some given future date.

Futures Market: Or, *Futures Exchange*. The commodity market that trades futures contracts. It is a self-regulating body whose aim is to decide the terms for acceptance of members, their trading restrictions, and their behavior in trading. Examples are Amex Commodity Exchange, The Commodity Exchange, Inc (COMEX), the New York Mercantile Exchange, the Chicago Board of Trade, and the Chicago Mercantile Exchange.

General Mortgage Bond: A bond collateralized by a blanket mortgage on a company's property, usually subordinated to specific pledges against specified properties.

Global Fund: A mutual fund that invests in both U.S. and foreign securities.

Good-Till-Canceled: This is an order for the purchase or sale of a security remaining in effect until filled or canceled.

Government Bonds: Obligations of the U.S. Government, considered as the highest grade because they have the least risk.

Government National Mortgage Association (GNMA): Government-owned corporation, nicknamed *Ginnie Mae*. GNMA issues pass-through securities. These pass through all payments of interest and principal received on a pool of federally insured mortgage loans. GNMA guarantees all payments of principal and interest on the mortgages on a timely basis.

Great Crash: The stock market collapse that occurred on the original *Black Monday* October 28, 1929, when the Dow Jones Average dropped 12.8 percent. The historic event helped trigger the *Depression* of the 1930s.

Growth and Income Fund: A mutual fund with the objective of periodic dividends and capital gains by investing in quality securities.

Growth Fund: A mutual fund having the objective of maximizing its return through capital gains. It usually invests in the stocks of potential companies which are anticipated to increase in value faster than inflation.

Growth Stock: A company having good prospects for future growth in earnings and activities.

G.T.C. Order: "Good 'til' canceled." A customer's order to his broker to buy or sell stock at a set price, the order continuing until it is either executed or canceled.

Hedge Funds: Funds, usually used by wealthy individuals and institutions, that are allowed to use aggressive strategies that are unavailable to mutual funds, including selling short, leverage, program trading, swaps, arbitrage, and derivatives.

Hedging: Protecting oneself from wide market changes by taking both buy and sell positions in a security or commodity.

Holding Company: A business that owns the voting shares of other companies.

Horizontal Analysis: The percentage change in an account or category over the years to reveal trends.

Income Bonds: Bonds promising to repay principal at the maturity date, but will pay interest only as it is earned. The issuer typically promises to add any unpaid interest to the face amount of the income bond when it is paid off.

Income Fund: A mutual fund that primarily seeks current income rather than growth of capital. It will tend to invest in stocks and bonds that normally pay high dividends and interest.

Indenture: A written contract under which bonds are issued, stipulating the maturity date, interest rate, collateral, etc.

Index: An index differs from an average in that it weighs changes in prices by size for the companies affected. The Standard & Poor's Index of 500 stocks computes changes in prices as if all the shares of each company were sold every day, thus giving a big company like General Motors its greater weight.

Index Arbitrage: The purchase of a stock-index future in one market and sale of the stocks that constitute that index in another market, or vice versa, in order to profit from

temporary price differences in the two markets. Index arbitrage is the most widely used form of *computerized program trading*.

Index Fund: A mutual fund that has as its major objective the matching of the performance of a specific stock index such as the *Standard & Poor's 500 Composite Stock Price Index*. An example is Vanguard's Index 500 Fund.

Index Options: Option contracts on stock indexes. Since there is no single underlying asset, covered writing is not possible with stock indexes.

Individual Investor: An individual whose major concerns in the purchase of a security are regular dividend income, safety of the original investment, and, if possible, capital appreciation.

Insider Trading: Buying and selling of stock by insiders such as corporate executives who have inside information concerning a company that is not known to others.

Institutional Investor: An institution such as a mutual fund, bank, insurance company or pension fund, operating on behalf of a broad client base that trades large blocks of securities.

Interest Rate Futures: Futures contracts on fixed income securities.

Interest Rate Options: Put and call options written on fixed income securities.

International Fund: A mutual fund that invests in securities of foreign companies. These funds make substantial gains when the dollar is falling and foreign stock prices are increasing. Some funds invest in many overseas markets while others only concentrate on particular foreign areas. Examples are T. Rowe Price International Stock Fund, T. Rowe Price Europe Fund, Fidelity Pacific Basin Fund, and Fidelity Canada Fund.

In-The-Money: A call option with a striking price less than the market price of the underlying security; a put option with a striking price greater than the market price of the underlying security.

Intrinsic Value: The intrinsic value of an option is what its premium would be if the price of the underlying stock would remain at its current level until expiration.

Inverted Yield Curve: This unusual phenomenon occurs when long-term Treasury bonds yield less than short-term Treasuries. Usually, the opposite is true, because investors want extra compensation to tie up money for long periods of time. In the past, an inverted curve has usually signaled an impending recession. But some economists say bond yields are low simply because investors are confident inflation is under control.

Investment: The use of money to make more money, to earn income or capital appreciation, or both.

Investment Banker: Also referred to as an underwriter. The middleman between the corporation raising money and the public. When an investment banker or syndicate underwrites a new issue, it stands ready to buy the new securities if they cannot be sold to the public.

Investment Club: A group who combines their funds to buy and sell stocks, bonds, and so on.

Investment Company: See Investment Trust.

Investment Counselor: A professional engaged in performing investment advisory services.

Investment Grade Bond: Any bond rated in the top four categories, i.e., triple-B or higher. (See also Junk Bond).

Investment Letters: Newsletters providing, on a subscription basis, the evaluation and recommendations of experts in different aspects of investment instruments.

Investment Software: Computer program that tracks investments in shares, cost, and income. The program updates the market value of securities, shows unrealized gains or losses, presents accumulated dividends, and the like. Examples of investment software are *Dow Jones Market Manager PLUS* and *Value/Screen II*.

Investment Trust: A company that invests in other companies after which it sells its own shares to the public. If it is a closed-end company, it sells its shares only. If it is an open-end company, or a mutual fund, it repeatedly buys and sells its shares.

Issue: Any of a company's securities, or the act of distributing such securities.

Junk Bonds: Bonds with a speculative credit rating of BB or less by financial rating services. They are generally more volatile, but pay higher yields than investment-grade bonds. They are issued by companies without long track records of sales or earnings, or by those with questionable credit strength. They have been key to financing takeovers in recent years.

Leverage: A broad term to describe using a smaller amount of an investment to control the total amount of the investment. Buying a stock on "margin," for example, permits an investor to borrow up to half the price of the stock. The ratio of dollars controlled to dollars invested in that case would be 2:1.

Limit Order: A customer's order to a broker to buy or sell at a given price or better.

Limited Partnership (Syndicate): Partnership in which the limited partner is obligated for the initial investment. The general partner (typically the organizer) who operates the syndicate has unlimited financial liability.

Lipper Average and Lipper Index: Calculated by Lipper Analytical Services, the average total return of funds in the same investment category and a hypothetical return which measures the performance of a specific market sector. These returns are often used to compare a fund's return to the performance of similar funds or the market sector.

Liquidation: The process of converting securities or property into cash. Or the dissolution of a company, with cash remaining after sale of its assets and payment of all indebtedness being distributed to the shareholders.

Liquidity: The degree of ease with which a security can be sold for cash.

Listed Stock: The stock of a company traded on a national securities exchange, and for which a listing application and a registration statement, providing detailed data about the company and its activities, have been filed with the SEC and the exchange involved.

Load (Sales Charge): A sales fee charged to buy shares in many mutual funds sold by brokers or other members of a sales force. Typically, the charge ranges from 2 percent to 8.5 percent of the initial investment. The charge is added to the *net asset value (NAV)* per share when determining the offer price. Not all mutual funds have a load.

Load (Mutual) Fund: A mutual fund sold to the public that charges sales commissions, typically called a *front-end load* when purchased.

Long: Signifies ownership of securities. "I am long 200 Merck" means the speaker owns 200 shares in that company. This term is used as the opposite of being "short" on an investment.

Low-Load Fund: A mutual fund that charges a minimal commission.

M: Abbreviation for 1,000. It is used to specify the face value of a bond.

Management: The Board of Directors, elected by the stockholders, and the officers of the corporation, appointed by the Board of Directors.

Management Fee: The fee paid for fund or portfolio management, expressed as a percentage of the fund's assets.

Management Letter: In an annual report, a letter from the chairman or chief executive officer (CEO) informing shareholders about the company's operations for the past year.

It is designed to address significant events at the company and give some analysis of its financial state.

Margin: The amount paid by the customer when he uses credit to purchase a security, the balance being advanced by the broker. According to Federal Reserve regulations, the initial margin required in the past 20 years has ranged from 40 percent of the purchase price all the way to 100 percent.

Margin Call: A demand upon a customer to send additional money or securities to the broker. The call is made when a purchase is made; also if a customer's equity in a margin account drops below a minimum standard established by an exchange or by the firm.

Margin Purchases (Buying): The buying of securities using some borrowed funds. The percentage of borrowed funds is limited by both law and brokerage firms.

Margin Requirement: Provision stating what percentage of each dollar used to buy a security must be provided by the investor.

Market Maker: Firm specializing in making markets for given securities. The market maker buys and sells the security receiving the difference between the purchase price and selling price as compensation.

Market Order: An order by a customer to a broker to purchase or sell at the best price available when the order reaches the trading floor.

Market Price: For a security, market price is typically considered the last reported price at which the stock or bond sold.

Market Return: The average return on all stocks, such as those in the S&P 500 Stock Composite Index.

Market Risk: For bond investors, the risk that interest rates will be moving higher, pushing bond prices down. For equity investors, the risk that equity prices will decline.

Maturity: The number of years until a bond's principal is repaid. Generally, long-term bond prices are more volatile to changes in interest rates than short-term counterparts.

Money Market: Market in which short-term debt securities such as T-bills and certificates of deposit (CDs) are purchased and sold.

Money Market (Mutual) Fund: A mutual fund investing high-yielding, short-term money market instruments such as U.S. T-bills and commercial paper.

Moody's Investors Services: A company that publishes a variety of investment reference manuals such as *Moody's Manuals*.

Mortgage REITs: REITs investing in long-term mortgage bonds.

Municipal Bonds: Debt securities of state or local governments or other public agencies. Their interest is exempt from federal income tax and from state income tax for residents of that state.

Mutual Fund: A company which uses its capital to invest in other companies. There are two major types: closed-end and open-end. Shares in closed-end investment trusts, are readily transferable in the open market and are bought and sold like other shares. Capitalization of these companies is fixed. Open-end funds sell their own new shares to investors, stand ready to buy back their old shares, and are not listed. Open-end funds are so called because their capitalization is not fixed and they issue more shares as investors want them.

Naked: An uncovered option strategy. It is an investment in which the written options are NOT matched with a long stock position or a long option position that expires no earlier than the written options. The loss potential with such a strategy is unlimited.

National Association of Securities Dealers (NASD): A self-regulatory organization that has jurisdiction over certain broker-dealers who trade *over-the-counter (OTC)* securities. The NASD requires member broker-dealers to register, and conduct examinations for compliance with net capital requirements and other regulations.

NASDAQ Indexes: Measures of current price behavior of securities sold in the over-the counter (OTC) market.

Negotiable: Refers to a security, title to which, when properly endorsed by the owner, is transferable by delivery.

Net Asset Value: The current market worth of a mutual fund share. Mutual funds compute their assets daily by summing the market value of all securities owned. All liabilities are subtracted, and the balance divided by the number of shares outstanding. The ensuing figure is the net asset value per share.

Net Change: Change in the price of a security from the closing price on one day to the closing price on the next trading day. If a stock is entitled to a dividend one day, but is traded "ex-dividend" the next, the dividend is considered in computing the change. For example, if the ending market price of a stock on Tuesday--the last day it was entitled to receive a \$1 dividend--was \$65 a share, and \$66 at the close of the next day, when it was "ex-dividend," the price would be considered unchanged. With a stock split, a stock selling at \$70 the day before a 2-for-1 split and trading the next day at \$35 would also be considered unchanged. If it sold at \$37, it would be considered up \$2. The net change is typically the last figure in a stock price list.

New Issue: A stock or bond sold by a company for the first time. Proceeds may be used to retire outstanding securities of the company, for new plant or equipment, or for additional working capital.

New York Stock Exchange Indexes: Measure of the current price behavior of the stocks traded on the NYSE.

No-Load Fund: A commission-free mutual fund that sells its shares at *net asset value* (NAV), either directly to the public or through an affiliated distributor, without the addition of a sales charge.

Nominal Yield: (1) The stated rate of interest (or coupon rate) on a debt security or loan. It may not be the true rate earned. In the case of bonds, the terms nominal interest rate and coupon rate are synonymous. The interest received on a bond investment equals the nominal interest rate times the face value of the bond. For example, on an 8%, \$10,000 bond, the investor would receive annual interest income of \$800 (\$10,000 x 8%). (2) The interest rate without adjusting it for inflation.

Non-Cumulative: A preferred stock on which unpaid dividends are lost.

Options Clearing Corporation (OCC): A company issuing calls listed on the options exchanges. Orders are placed with this corporation, which then issues the calls or closes the position.

Odd Lot: An amount of stock less than the established 100-share unit or 10-share unit of trading: From 1 to 99 shares for the great majority of issues, 1 to 9 for so-called inactive stocks.

Offer: The price at which a person will sell. Opposed to bid, the price at which one will buy.

On-Line Database: A service, such as Dow Jones News/Retrieval, furnishing historical, financial, market and economic data or current stock market prices and financial news obtained via telecommunications.

Open-End (Mutual) Funds: A mutual fund that an investor buys shares from and sells these shares back to the fund itself. This kind of fund offers to sell and redeem shares on a continual basis for an indefinite time period. Shares are bought at *net asset value* (NAV) plus commission (if any), and redeemed at NAV less a service charge (if any).

Open Order: Buy or sell order for a security at a stated price. An open order continues until executed or canceled by the customer.

Option: A contract allowing an investor to reserve the right to buy or sell (1) a stipulated number of shares of stock, (2) at a fixed price per share, (3) for a limited time period.

There are two types of option contracts: calls and puts.

Out-Of-The-Money: Term used when the striking price of an option is below the price of the underlying stock for a call option, or greater than the price of the underlying stock for a put option.

Overnight Orders: Orders put in to buy and sell securities after the market is closed.

Over-the-Counter (OTC): Trading of securities through a broker-dealer, typically through a computer or over the telephone, without using the facilities of an exchange. The securities may or may not be listed on an exchange.

Pacific Stock Exchange (PSE): Exchange that handles trading of west coast companies.

Paper Profit: An unrealized gain on a security still held. Paper profits become realized when the security is sold.

Par Value: For a stock, the dollar amount assigned each share of stock in the company's charter. For preferred issues and bonds, the value on which the issuer promises to pay dividends.

Participating Preferred: A stock entitled to receive a proportionate share of excess dividends after common stockholders have received their regular dividend.

Passed Dividend: Omission of a scheduled dividend.

Penny Stocks: Low-priced, usually risky stocks, which typically sell for \$5.00 or less per share. Penny stocks are traded in the *over-the counter (OTC)* market.

Performance (Go-Go) Fund: A mutual fund portfolio of speculative securities designed to achieve very high returns. However, there is a lot of risk.

Point: (1) In the case of shares of stock, a point is \$1. For example, if GM shares increases 3 points, each share has risen \$3. (2) In the case of bonds, a point means \$10, because a bond is quoted as a percentage of \$1,000. A bond which rises 4 points gains 4 per cent of \$1,000 or \$40 in value. (3) In the case of market averages, the word point means merely that. It is not equivalent to any fixed sum of money.

Portfolio: Holdings of securities by an individual or institution. A portfolio may include bonds, preferred stocks, and common stocks of different types of companies.

Position: (1) An investor's holding of particular securities. (2) A chosen "strategy." For example, an option position is an investment comprised of one or more options.

Precious Metals: Tangible assets including gold, silver, and platinum.

Preferred Stock: A category of stock having a claim on the company's profits before payment may be made on the common stock and typically is entitled to priority over common stock if the company fails. Preferred stockholders are usually entitled to dividends at a certain rate and before payment of a dividend on the common stock depending upon the terms of the issue.

Premium: (1) A market term meaning an excess over an expected norm. A preferred stock or bond selling at a premium brings more than its par value. A new issue that rises quickly from its issuing price sells at a premium. When the redemption price of a bond or preferred issue is higher than par, redemption is at a premium. (2) The purchasing or selling price of an option contract.

Price-Earnings (P-E) Ratio: Also called *earnings multiple* or *market multiple*, current market price of a stock divided by the last year's earnings per share (EPS), i.e., the total EPS of the last four reported quarters.

Price-to-Book Ratio: Market price per share divided by book value (tangible assets less all liabilities) per share. A measure of stock valuation relative to net assets.

Primary Distribution: Also termed *primary offering*. The initial sale of a company's securities.

Primary Market: A market of new securities issues.

Prime Rate: The interest rate charged by banks to their most financially strong customers for short-term loans.

Principal: The individual for whom a broker executes an order, or a dealer buying or selling for his own account. The term "principal" may also refer to a person's capital or to the face amount of a bond.

Profit Diagram: A chart showing the relationship between the price of a security and the corresponding gain or loss to an investor.

Profit Margin: Net income divided by sales.

Profit Taking: Realizing a gain through sale of a security or commodity.

Profit Table: A table showing the relationship between the price of a security and corresponding gain or loss to an investor.

Program Trading: The term used to describe the use of computer software to formulate

security trading decisions. The software has built-in guidelines that instantaneously trigger buy and sell orders when differences in the prices of the securities are great enough to generate profit. Program trading is used by institutional investors, who place buy and sell orders in large blocks of ten thousand or more units. This type of large trade tends to substantially impact the prices of securities in the market. Sometimes, the program trading orders reach the trading floors from a number of firms. This impact can be seen most readily during what is called *triple witching hours (or days)*. The triple witching hour occurs four times annually in the hour prior to the moment (4:00 P.M. EST, on the third Friday of March, June, September, and December) when listed stock options, listed stock index options, and commodity index futures all expire at once. During this hour, the *Dow Jones Industrial Average* and other indices may change drastically.

Prospectus: A circular, required by the Securities Act of 1933, that describes securities being offered for sale. Its objective is full disclosure, particularly of any negative prospects for the issuer. It discloses facts regarding the issuer's activities, including the experience of its management, its financial position, any expected legal issues that could impact the company, and potential risks of investing in the business.

Proxy: Written permission given by a stockholder to someone else to represent him and vote his shares at a shareholders' meeting.

Proxy Statement: Information required by the SEC to be given to their stockholders as a prerequisite to solicitation of proxies.

Prudent Man Rule: A rule stating that a fiduciary, such as a trustee, may invest only in a list of securities allowed by the state. In other states, the trustee may invest in a security in a prudent, conservative manner.

Put: This option contract giving the right to sell 100 shares of a particular stock at a set price per share (the striking price) for a limited time (until expiration).

Puts and Calls: Options giving the right to buy or sell a fixed amount of a certain stock at a specified price within a particular time. A put gives the holder the right to sell the stock; a call the right to buy its stock. Puts are bought by those who believe a stock may go down. A put obligates the seller to take delivery of the stock and pay the specified price to the owner of the option within the contract's time limit. Calls are purchased by those who believe a stock may rise. A call gives the holder the right to buy the stock at the specified price within a fixed period of time. Put and call contracts are written for 30, 60, or 90 days, or longer. If the purchaser of a put or call does not want to exercise the option, the price he paid for the option becomes a loss.

Quotation: Or, *Quote*. The highest bid to buy and the lowest offer to sell a security in a particular market at a given time. If you ask your broker for a quotation on a stock, he/she may say, for example, "30 1/4 to 30 3/4." This means that \$30.25 was the highest price any buyer wished to pay (bid) at the time the quotation was given on the exchange and that \$30.75 was the lowest price at which any holder of the stock offered to sell.

Rally: A significant increase following a decline in the general price level of the market or of a specific stock.

Real Estate Investment Trust (REIT): A type of closed-end investment company that invests money, obtained through the issuance of shares to investors, in different kinds of real estate and/or mortgages.

Realized Yield: The rate of return earned over a period of time that is less than the life of the issue.

Record Date: The date on which you must be registered on the company's books as a shareholder to receive a dividend or to vote.

Redemption Price: The price at which a bond may be repurchased before maturity, or a preferred stock retired, at the issuer's option.

Regional Stock Exchanges: Organized securities exchanges for the *New York Stock Exchange (NYSE)* and the *American Stock Exchange (AMEX)* that deal mostly in securities having a local or regional flavor.

Registered Bond: A bond registered on the books of the issuer's transfer agent. The owner receives the interest by mail instead of by coupon and must endorse the bond to transfer it.

Registered Representative: Also known as "customers' broker" or "customers' man." An employee of a brokerage firm, he is registered with an exchange or the National Association of Securities Dealers as having passed certain tests and met certain requirements authorizing him to serve the public.

Registration: Before a public offering may be made of new securities by a company, or of outstanding securities by controlling stockholders—through the mails or in interstate commerce—the securities must be registered under the Securities Act of 1933. The application must be filed with the SEC by the issuer. It must disclose information on the company's operations, securities, management, and objective of the public offering.

Regulation T: Federal requirement on the amount of credit which may be advanced by brokers and dealers to customers for buying of securities.

Regulation U: Federal rule on the amount of credit which may be advanced by a bank to its customers for the purchase of securities.

Reverse Stock Split: A division of shares into a lesser number.

Rights: The right given by the company on the additional issuance of its stock to buy the new shares before others in proportion to the number of shares owned. In general, the stockholders pay less than the public. The rights enable existing stockholders to retain pro rata ownership interest.

Rollover: Reinvestment of proceeds from an IRA account. The rollover period is 60 days to avoid taxes and possible early distribution penalties.

Round Lot: A unit of trading or a multiple thereof. On the New York Stock Exchange the unit of trading is generally 100 shares in stocks and \$1,000 par value in the case of bonds.

Royalty Trust: An investment in oil and gas production, structured like a REIT.

R-squared: A measure of how much of the fund's performance variation can be traced to movement of the overall market. For example, a fund with an R-squared of .9 is 90% as diversified as the market. This means 90% of the fund's risk is market-related and 10% is due to the fund's unique characteristics.

Secondary Distribution: Also referred to as a secondary offering. This is the resale of a block of stock from a major owner or owners, instead of the company itself. It is usually sold through an underwriter or syndicate at a stated price near the stock market's valuation of the shares, but without sales commission or odd-lot differential.

Sector (Mutual) Fund: Or, *Specialized Fund* or *Specialty Fund*. A mutual fund that invests in one or two fields or industries (sectors). These funds are speculative because price fluctuates depending on how the individual fields or industries perform.

Securities and Exchange Commission (SEC): The overseer of the financial market, established by Congress to protect investors. The SEC administers the Securities Exchange Act of 1933, the Securities Exchange Act of 1934, the Trust Indenture Act, the Investment Company Act, the Investment Advisers Act, the Public Utility Holding Company Act, and the amendments to some of these contained in the Securities Acts Amendments of 1964. SEC rules attempt to protect the public from malpractice and negligence in the securities market and force companies to disclose information pertinent to investors.

Securities Market Indexes: Indexes measuring the value of a sample number of securities to reflect the behavior of the overall market.

Selling Against the Box: A short sale to protect a profit in a security and to defer taxes to a later year. For example, an investor owns 100 shares of XYZ Company which has gone up and which he believes may decline. As a result, he sells the 100 shares “short” and keeps them. If the stock declines, the profit on his short sale is exactly offset by the loss in the market value of the stock owned. If the stock advances, the loss on his short sale is offset by the gain in the market value of the stock he retained.

Shadow Stock: Stock that is small, with low institutional interest, and that has had positive annual earnings for the two previous years. It is out of the spotlight and in the shadows of Wall Street.

Short: This is when an investor sells borrowed stock, expecting to buy it back at a lower price. In options, an investor who has written options has a short position in them.

Short Covering: Buying stock to cover a short sale when delivery is required.

Short Position: Stock sold short and not covered as of a specific date. On the New York Stock Exchange, a tabulation is issued a few days after the middle of the month listing all issues on the Exchange in which there was a short position of 5,000 or more shares, and issues in which the short position had changed by 2,000 or more shares in the prior month. Initial margin requirements for a short position are the same as for a long position.

Short Sale (Selling): Sale of a stock the seller does not own, hoping to buy it later at a lower price before having to return it to the lender.

Small Investor Index: An index, published by *Money*, that measures gains and losses of the typical investor. It is based on a portfolio including types of investments held by average small investors.

Specialist: The Stock Exchange member who maintains an orderly market in a particular stock by buying or selling on his own account when bids and offers by the public are not suitably matched to maintain an orderly market. The specialist is the broker's broker and receives commissions for executing other brokers' orders.

Speculation: The employment of funds by a speculator. The safety of principal is a secondary concern.

Speculator: An investor willing to take greater risk to make substantial gain. The investor's major concern is capital appreciation instead of dividend income. The speculator may buy and sell the same day or speculate in a company he does not anticipate to be profitable for years. An example is investing in a penny stock.

Split: Increasing the number of outstanding shares proportionately. A 2-for-1 split by a company with 1,000,000 shares outstanding would result in 2,000,000 shares outstanding. Each holder of 1,000 shares before the 2-for-1 split would have 2,000 shares, although his proportionate equity interest remains the same. A company sometimes declares a stock split to make the market price per share lower to attract smaller investors. A stock split may arise if the market price of stock has significantly increased and the company wants to lower it.

Spread Order: A type of order for the simultaneous purchase and sale of two options of the same type (calls or puts) on the same underlying security. If placed with a “limit,” the two options must be traded for a specified price difference or better.

Standard Deviation: A measure of the security’s total risk. It is the sum of security-specific risk and market risk (beta). The more volatile the returns, the higher the standard deviation.

Standard & Poor’s Corporation (S&P): The publisher of financial and investment reports and services, including *Corporation Records*, *Stock Guide*, and *Bond Guide*.

Standard & Poor’s 500 Stock Composite (S&P 500): The 500 Stock Composite Index computed by Standard & Poor’s. It is different from the *Dow Jones Industrial Average (DJIA)* in several respects. First, it is value-weighted, not price-weighted. The index thus considers not only the price of a stock but also the number of outstanding shares. It is based on the aggregate market value of the stock; i.e., price times number of shares. A benefit of the index over the DJIA is that *stock splits* and *stock dividends* do not impact the index value. A drawback is that large capitalization stocks—those with a large number of shares outstanding—significantly influence the index value. The S&P 500 consists of four separate indexes: the 400 industrials, the 40 utilities, the 20 transportation, and the 40 financial.

Standardized Yield: also called *SEC yield*, a method of calculating a fund’s yield, assuming all portfolio securities are held until maturity. The SEC requires all fixed-income funds to calculate this measure of return.

Stock Dividend: A dividend issuable in stock, not cash. The dividend may be additional shares of the issuing company, or shares of another company (usually a subsidiary).

Stock Index Futures: Futures contracts written on broad-based measures of stock market performance like the S&P Stock Index.

Stock Index Option: A call or put option written on a particular market index such as the S&P Stock Index.

Stock Split: *see* Split.

Stockholder of Record: A stockholder whose name is registered on the books of the issuing corporation.

Stop Order: An order to buy or sell stock or options at a price other than the current market price. It becomes a market order when the stock or option trades at the price specified.

Street: The New York financial community located in the Wall Street area.

Street Name: Securities held in the name of a broker rather than the customer's. This occurs when the securities have been bought on margin or when the customer wants the securities to be held by the broker.

Striking Price: Also called exercise price. The fixed price per share stipulated in the option contract.

Stripped Treasuries: Zero-coupon bonds issued by the U.S. Treasury and created by stripping the coupons from a Treasury bond and selling them separately from the principal.

Subprime mortgages: Mortgages for people with credit scores under 620; also called non-prime mortgages. Many such homeowners found themselves unable to pay off their mortgages as interest rates rose and house values sank. *See also* toxic assets.

Switching: Selling one security and buying another or going from one fund to another in the same mutual fund.

Syndicate: A group of investment bankers underwriting and distributing a new issue of securities or a large block of an outstanding issue.

Tangible Assets: Tangible items of real and personal property that usually have a long life, such as housing and other real estate, automobiles, jewelry, cash, and other physical assets.

Tax Equivalent Yield: The yield on a tax-free municipal bond stated on an equivalent before-tax yield basis, because the interest received is not subject to federal income taxes.

Tax-exempt Bond: A bond which pays no federal taxes since it is issued by a state or subordinate division thereof.

Technical Position: A term about the internal factors impacting the market, as distinguished from fundamental forces such as economic expansion or decline.

Tender Offers: Offers by an outside party to buy shares directly from current shareholders, usually with the intent of gaining a controlling interest in a corporation.

The Wall Street Journal: A daily financial newspaper, published by Dow Jones.

Thin Market: The market in which buying or selling a few shares can affect the security's price disproportionately either upward or downward.

Third Market: Trading in the over-the-counter market of securities listed on an exchange.

12B-1 Fees: Fees of a mutual fund that cover advertising and marketing costs, but do nothing to improve the performance of the fund. Their main purpose is to bring new customers to the fund, and ultimately more money for the fund's management to invest.

Tick: The term used to describe each incremental change in a stock's price.

Ticker: The device that prints prices and volume of security transactions in cities across the U.S. within minutes after each trade is executed on the exchange.

Time Value: The amount that the premium of an option exceeds its intrinsic value. It incorporates the statistical possibility that the option premium will increase in value. If an option is out-of-the-money then its entire premium consists of time value.

Tips: Supposedly "inside" information on company affairs.

Total Return: The return earned on a security investment over a given time period. It equals dividend (or interest) income and capital gains (losses).

Trader: One who buys and sells for his own account for short-term appreciation. Also applies to brokerage employees who buy and sell in the over-the-counter market.

Trading Post: Trading locations where securities are bought and sold on the exchange floor.

Transfer Agent: The bank employed by mutual funds to prepare and maintain records relating to fundholder accounts.

Treasury Bill: A short-term (91-to-360-day) debt instrument issued by the federal government. It is safe and marketable.

Treasury Bond: A federal government obligation, typically payable to the bearer, issued at par, with maturities exceeding five years and interest paid twice a year.

Treasury Note: A debt of the federal government, usually typically payable to bearer, with a fixed maturity of not less than one year or more than seven years. It is issued at face value with semiannual interest payment.

Treasury Stock: Stock issued by a company but later bought back. It may be held in the company's treasury indefinitely, reissued to the public, or retired. Treasury stock receives no dividends and has no vote while held by the company.

Triple Witching Days: See Program Trading.

Turnover: The volume of business in a security or the overall market. If turnover on the New York Stock Exchange is reported at 5,000,000 shares on a particular day, 5,000,000 shares changed hands. Odd-lot turnover is computed separately and typically is not included in reported volume.

Uncovered: An investment in which the written options are not matched with a long stock position or a long option position that expires no earlier than the written options. The potential loss of this strategy is unlimited.

Underlying Stock: This is the stock specified in an option contract which is transferred upon exercise of the option contract.

Underwriter: See Investment Banker.

Underwriting: The buying of securities from the issuing company, thus guaranteeing the business capital it wants, and in turn selling the securities, at a markup, to the investing public or institutions.

Underwriting Syndicate: A group of underwriters (that is, investment banking firms) assuming the task of selling a new security issue.

Unit Investment Trust: A closed-end investment company created by investment bankers in which the proceeds from the sale of original shares are invested in a fixed (and unmanaged) portfolio of bonds and held until maturity. Similar to a mutual fund, a unit investment trust offers small investors the benefits of a large, professionally chosen and diversified portfolio. Unlike a mutual fund, however, its portfolio is fixed, once structured; it is not actively managed.

Unlisted: A security not listed on a stock exchange.

Up Tick: Also called a "plus" tick. A price higher than the preceding transaction in the stock. A stock may be sold short only on an up tick, or on a "zero-plus" tick. A "zero-plus" tick is a transaction at the same price as the preceding trade but higher than the preceding different price. Conversely, a down tick, or "minus" tick, is a transaction made

at a price lower than the preceding trade. A “zero-minus” tick is a transaction made at the same price as the preceding sale but lower than the preceding different price. A plus sign, or a minus sign, is displayed throughout the day next to the last price of each company’s stock traded at each trading post on the floor of the New York Stock Exchange.

U.S. Savings Bond: Bond issued in various denominations and maturities by the U.S. Treasury to aid in financing federal government activities.

Value Averaging: An alternative approach to *dollar cost averaging*. The strategy is to make the value of investment holdings go up by some constant amount (such as \$100) each month. It is little more complex than dollar cost averaging but can typically provide higher returns at lower-per-share costs.

Value Line Composite Average: A stock average, published by Value Line, which reflects the percentage changes in share price of some 1,700 stocks traded on the NYSE, AMEX, and OTC markets.

Value Line Investment Survey: A weekly subscription service covering some 1,700 of the most widely held stocks and mutual funds.

Vertical Analysis: Financial statement analysis that presents all other accounts on the financial statement in percentage terms as relative to a base value. For example, in the balance sheet, total assets equals 100 percent and each asset is expressed as a percentage of total assets.

Volatility: A measure of price and interest rate variability. Stocks with greater volatility show wider price swings and their options are higher in price than less volatile ones.

Voting Right: The stockholder’s right to vote his stock in the affairs of the business. One common share usually has one vote. A stockholder may assign his vote to another through a “proxy.”

Warrant: The right to buy a security at a fixed price, either for a stated time period or indefinitely. A warrant is usually offered with another security as an inducement to buy.

Wash Sale: Sale of a security to establish a capital loss and then repurchase the same security within thirty days after the sale.

When Distributed: A security trading in advance of the printing of the certificate.

When Issued: A short form of “when, as, and if issued.” It is a conditional transaction in a security authorized for issuance but not as yet issued. All “when issued” transactions

are on an “if” basis, to be settled if and when the actual security is issued and the National Association of Securities Dealers or an exchange rules the transactions are to be settled.

White Knight: A slang term for an individual or company who saves a corporation from an unfriendly takeover by taking it over himself/herself. This way the targeted corporation is rescued from the unwanted bidder’s control.

Wilshire 5000 Index: Measure of the total dollar value of 5,000 actively traded stocks, including all those traded on the NYSE, AMEX and OTC markets.

Write: An investor who sells an option contract not currently held (selling the option short) is said to have written the option.

Writer (of Options): A person who writes the options to be bought or sold by the option buyer.

Yield: Also known as *Return*. The dividends or interest paid by a company stated as a percentage of the current price. The return on a stock is computed by dividing the total of dividends paid in the prior 12 months by the current market price. For a mutual fund, yield is interest or dividends plus capital gain or loss in the price per share.

Yield Curve: A graph of the term structure of interest. It shows bonds’ yields relative to their maturities. The yield curve is positive, or upward sloping when long-term bonds yield more than short-term issues.

Yield to Call: A yield on a bond to be called. Not all bonds are held to maturity.

Yield to Maturity (YTM): The fully compounded rate of return on a bond, presuming it is held to maturity.

Zero-Coupon Bond: Or, *Original Issue Discount (OID) Bond*. A bond purchased at a deep discount. The interest is added to the principal semiannually and both the principal and the accumulated interest are paid at maturity.

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