**OPTIONS**

**Uses of Derivatives:**

**1. Risk Management:**

Instead of wheat, imagine that your crop is equity securities: You want their value to grow and generate capital gains. Your focus is more on investor demand than on supply. When the country goes on the stock-buying binge, prices go up. When people get cold feet and retreat from the market, prices go down. This market risk phenomenon is generally analogous to the farmer’s price risk. Similarly, someone holding bonds faces a potential for a paper loss should interest rates unexpectedly. Derivative assets, especially interest rate futures, can be used to reduce the interest rate risk.

**2. Risk Transfer:**

Derivatives are much more convenient (and less expensive) to use than security purchases or sales each time the portfolio manger decides to alter market exposure. Futures and options provide a means for risk to be transferred from one person to some other market participant who, for a price is willing to bear it.

**3. Financial Leverage:**

Derivatives may provide financial leverage, which is one of the primary reasons some speculators use them. As an example, an investor may feel that Ionics, Inc. (ION, NYSE), a manufacturer of water treatment products, is an excellent take over candidate. If that investor bought 100 shares of this stock at $29, the cost would be $2,900. As an alternative the investor could speculate on takeover rumors using a single stock option selling for perhaps $300. With this position, the investor would benefit from a sharp increase in the stock price, but would have only a modest amount of money at risk. The worst that could happen is that the investor would lose all $300. On the other hand, an investor who bought the stock could lose much more than that if the stock plummeted.

**4. Income Generation:**

Some people use derivatives as a means of generating additional income from their investment portfolio. Options are widely used for this purpose in the portfolios of endowment funds, pension funds, and individual portfolios.

**5. Financial Engineering:**

Just as the chemist mixes compounds in the laboratory to produce something with known characteristics, a financial engineer can mix financial assets in such a way that portfolio has special characteristics. Derivative assets are the basic building blocks the engineer uses. Some of the recent financial disasters involving derivatives occurred because the product mix was the potentially volatile. Nitroglycerin can be use to treat heart disease, but masked men of the Wild west also used it to blow up trains. Slight variations in the composition of portfolio can result in drastically different characteristics.

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**What’s next?**

It is unlikely that we have seen the last of innovation in the derivative assets markets. Many brilliant minds are searching for a better mousetrap in the areas of risk management and income generation. As with much of scientific discovery, what is commonplace today would have been a marvel just a few years ago. One thing that is certain is that these products are the permanent features of the financial landscape. An informed investment professional needs a basic understanding of their uses and potential risks.

**The Origin of an Option:**

Two parties are necessary to trade; if someone buys an option, someone else has to sell it. Unlike more familiar securities such as shares of stock, there is no set number of put or call options. In fact, the number in existence changes every day. Options can be destroyed. This unusual fact is crucial to understanding the options market.

The first someone makes in a particular is called an opening transaction. When the option is subsequently closed out with a second trade (or with expiration of the option), this latter trade is called a closing transaction. Purchases and sales can be either type of transaction.

Buying something as an opening transaction is perhaps easier to understand than selling something as an opening transaction. Returning to the football ticket example, the university created the tickets and sold them; this was an opening transaction for the university. When an option is sold as an opening transaction, it is called writing an option.

No matter what the owner of an option does, the writer of the option keeps the option premium. The university keeps the $ 24 you paid for the two tickets whether you go the game or not.

Options have an important characteristic called fungibility, meaning that, for a given company, all options of the same type with the same expiration and striking prince are identical. Just as a $1 bill is equivalent to any other $ bill, a Microsoft APR 90 call written today is equivalent to a Microsoft APR 90 call written last month. Fungibility is particularly important to the option writer. An investor who writes an option receives premium for doing so. If market conditions changes a week later, the investor can buy an identical option and close out the position. The investor pays for the option purchased, which may be more or less than the amount received when the investor wrote the option. The important point is that the option need not be repurchased from the specific person to whom it was sold, because the options are fungible.

**THE OPTIONS MARKET:**

**Options:**

Which represent claims on an underlying common stock, are created by investors and sold to other investors? The corporation whose common stock underlies these claims has no direct interest in the transaction, being in no way responsible for the creating, terminating, or executing put and call contracts.

**Contracts giving the owner the Tight to buy or sell the underlying asset**

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**Call:**

**An option to buy a stock at a sated price within a specified period of months**

A call option gives the holder the right to buy (or "call away") 100 shares of a particular common stock at a specified price any time prior to a specified expiration date. Investors purchase calls if they expect the stock price to rise, because (lie price of the call and the common stock will move together. Therefore, calls permit investors to speculate on a rise in the price of the underlying common stock without buying the stock itself.

**Put:**

**An option to sell a stock at a stated price within a specified period of months**

A put option gives the buyer the right to sell (or "put away") 100 shares of a particular common stock at a specified price prior to a specified expiration date. If exercised, the shares are sold by the owner (buyer) of the put contract to a writer (seller) of this contract who has been designated to take delivery of the shares and pay the specified price. Investors purchase puts if they expect the stock price to foil, because the value of the put will rise as the stock price declines. Therefore, puts allow investors to speculate on \* decline in the stock price without selling the common stock short.

**Why Options Market?**

An investor can always purchase shares of common stock if he or she is bullish about the company's prospects or sell short if bearish. Why then should we create these indirect claims on a stock as an alternative way to invest? Several reasons have been advanced, in-cluding the following:

1. Puts and call expand the opportunity set available to investors, making available risk-return combinations that would otherwise be impossible or that improve the-risk-return characteristics of a portfolio. For example, an investor can; sell the stock short and buy a call, thereby decreasing the risk on the short sale for the life of the call.
2. In the case of calls, an investor can control (for a short period) a claim on the underlying common stock for a much smaller investment than required to buy the stock itself. In the case of puts, an investor can duplicate a short sate without a margin account and at a modest cost in relation to the value of the stock. The buyer's maximum loss is known in advance. If an option expires worthless, the most the buyer can lose is the cost (price) of the option.
3. Options provide leverage magnified percentage gains in relation to buying the stock; furthermore, options can provide greater leverage than fully margined, stock transactions.
4. Using options on a market index such as the Standard & Poor's 500 Composite Index (S&P 500), an investor can participate in market movements with a, single trading decision.

**Understanding Options:**

To understand puts and calls, one must understand the terminology used in connection with them. Our discussion here applies specifically to options on the organized exchanges as reported daily in such sources as The Wall Street Journal.4 Important options terms include the following:

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**1. Exercise (strike) price:**

The exercise (strike) price is the per-share price at which the common stock may be purchased (in the case of a call) or sold to a writer (in the case of a put). Most stocks in the options market have options available at several different exercise prices, thereby providing investors with a Choice. For stocks with prices greater than $25, the strike price changes in increments of $5, whereas for those under $25, the increment is $2.50. As the stock price changes, options with new exercise prices are added.

**2. Expiration date:**

The expiration date is the last date at which an option can be exercised. All puts and calls are designated by the month of expiration. The options exchanges currently offer sequential options and-other shorter term patterns. The expiration dates for options contracts vary from stock to stock but do not exceed nine months.

**3. Option premium:**

The option premium is the price paid by. the option buyer to the writer (seller) of the option whether put or call. The premium is stated on a per-share basis for options on organized exchanges; and since the standard contract is for 100 snares, a $3 premium represents $300, a $15 premium represents $1500, and so forth. Information on options premiums can be found on The Wall Street Journal's "Listed Options Quotation" page. The most active contracts for the day are reported along, with some individual equity options. Information about index options is also available on this page.

The options page of The Wall Street Journal, as well as other sources, also carries the information for long- term options known as long-term equity anticipation securities (LEAPS), which were introduced in 1990. These long-term options, available on roughly 450 stocks and several indexes, trade on four U.S. exchanges. All LEAPS options for stocks expire in January, and for indexes, December. Maturities extend out to about two and one-half years.

LEAPS are typically more expensive than short-term options, but with a longer maturity, they may cost less per share when calculated on a daily basis. Like short-term options, they can be used to hedge-or speculate.

Standardized Options Characteristics:

**Features:**

All options have standardized expiration dates. For most options, it falls on the Saturday following the third Friday designated months. Individual investors typically view the third Friday of the month as the expiration date, because exchanges are closed to public trading on Saturday.

Striking prices are established at multiples of 2 ½ or $5 depending on the current stock price. Stocks priced at $25 or below have the low multiple, while higher period stocks have the $5 multiple. Shifts in the price of a stock result in the creation of new striking prices. As a matter of policy there is always at least one striking price above and at least below the current stock price.

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Both puts and calls are based on 100 shares of the underlying security. As investor who buys a call option on the stock of particular company is purchasing the right to buy 100 shares of stick. It is not possible to buy or sell odd lots of options.

**The Premium:**

The premium has two components: intrinsic value and time value. For a call option, intrinsic value equals stock price minus striking price; for a put, intrinsic value equals striking price minus stock price. In some respects, determining intrinsic value is the first step in valuing an option. By convention, intrinsic value cannot be less than zero. Time value is equal to the option premium minus the intrinsic value.

If an option has no intrinsic value, it is out-of-the-money, if it does have intrinsic value, it is in-the-money. In special when an option’s striking price is exactly equal to the price of underlying security, the option is at-the-money.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Intrinsic |  |  |  |  |  |
| + | Time value | = | Option |  |
| value |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |

**How Options Work:**

AS noted, a standard call' (put) contract gives the buyer the right to purchase (sell) 100 shares of a particular stock at a specified exercise price any time before the expiration date. Both puts and calls are created by sellers who write a particular contract. Sellers (writers) ate investors, either individuals or institutions, who seek to profit from their beliefs about the underlying stock's likely price performance, just as the buyer does.

The buyer and the seller have opposite expectations about the likely performance of the underlying stock, and therefore the performance of the option.

1. The call writer expects the price of the stock to remain roughly steady or perhaps move down.
2. The call buyer expects the price of the stock to move upward relatively soon.
3. The put writer expects the price of the stock to remain roughly steady or perhaps move up.
4. The put buyer expects the price of the stock to move down relatively soon.

**THE MECHANICS OF TRADING:**

**The Options Exchanges:**

Five option exchanges constitute the secondary market: the Chicago Board Options Exchange (CBOE), the American, the Philadelphia, the Pacific, and the newer International Securities Exchange (1SE) in New York. Traditionally, the first four exchanges controlled the trading of U.S. options, each handling different options and competing very little. The ISE began trading in May 2000, and now has a substantial share of U.S. trading volume in options. This all-electronic market is extremely efficient, and has forced the other four exchanges to handle all options. This competition has led to lower costs and narrower spreads for customers, and quicker access to the market.

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The options markets provide liquidity to investors, which is a very important requirement for successful trading. Investors know that they can instruct their broker to buy or sell whenever they desire at a price set by the forces of supply and demand. These exchanges have made puts and call a success by standardizing the exercise date and exercise price of contracts.

**The Clearing Corporation:**

The options clearing corporation (OCC) performs a number of important functions that contribute to the success of the secondary market for options. H functions as an intermediary between the brokers representing the buyers and the writers. That is, once the brokers representing the buyer and the seller negotiate the price on the floor of the exchange, they no longer deal with each other but with the OCC.

Through their brokers, call writers contract with the OCC itself to deliver shares of the particular stock, and buyers of calls actually receive the right to purchase the shares from the 0CC Thus, the OCC becomes the buyer for every seller and the seller for every buyer, guaranteeing that all contract obligations will be met. This prevents the problems that could occur as buyers attempted to force writers to honor their obligations. The net position of the OCC is zero, because the number of contracts purchased must equal the number sold.

Investors wishing to exercise their options inform their brokers, who in turn inform the OCC of the exercise. The OCC randomly selects a broker on whom it holds the same written contract, and the broker randomly selects a customer who has written these options to honor the contract. Writers chosen, in this manner are said to be assigned an obligation or to have received an assignment notice. Once assigned, the writer cannot execute an offsetting transaction to eliminate the obligation; .that is, a call writer who receives an assignment must sell the underlying securities, and a put writer must purchase them.

One of the great advantages of a clearinghouse is that transactors in this market can easily cancel their positions prior to assignment. Since the OCC maintains all the positions for both buyers and sellers, it can cancel out the obligations of both call and put writers wishing to terminate their position. With regard to puts and calls, margin refers to the collateral than option writers provide their brokers to erasure fulfillment of the contract in case of exercise. Options cannot be purchased on margin. Buyers must pay 100 percent of the purchase price.

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**DEFINTION OF INVESTING:**

An economist says when people earn a dollar; they do one of two things with it: they either consume it or save it. A person consumes a dollar by spending it on something like a car, clothing, or food. People also consume some of their money involuntarily because they must pay tax; a person saves a dollar by somehow putting it aside for consumption at a later time. (Referred to Handout # 1)

**Investing is risky but saving is not.**

**INVESTMENT ALTERNATIVES:**

**Assets:**

Assets are things that people own. The two kinds of assets are financial assets and real assets. The distinction between these terms is easiest to see from an accounting viewpoint. A financial asset carries a corresponding liability somewhere. If an investor buys shares of stock, they are an asset to the investor but show up on the right side of the corporation’s balance sheet. A financial asset, therefore, is on the left-hand side of the owner’s balance sheet and the right-hand side of the issuer’s balance sheet.

**A real asset does not have a corresponding liability associated with it, although one might be created to finance the real asset.**

**Financial assets have a corresponding liability but real assets do not.**

**Categories of Stock:**

Although all common shares represent an ownership interest in the company, the investment characteristics of these shares differ widely. Some share are stable, some are volatile. Some pay dividends, some don’t. Some are speculations about events years in the future, other are investments in current results; investors often place stock into a particular group according to its investment characteristics. (Referred to Handout # 4)

**Types of Orders:**

When investors place orders to buy or sell securities, they expect their instructions to be precisely understood by the people involved in processing the order. A number of standard packets of instructions are used in the brokerage business to aid in this process. (Referred to Handout # 4)

**TYPES OF ACCOUNTS:**

People who buy or sell stock through a brokerage firm have an individual account in which they make their trades. While a single account number is associated with each investor, these accounts have important subsidiary accounts. Two such accounts are cash account and margin account. (Referred to Handout # 5)

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**Fundamental Analysis:**

Fundamental analyst at the company level involves analyzing basic financial variables in order to estimate the company's intrinsic value. These variables include sales, profit mar-gins, depreciation, the tax rate, sources of financing, asset utilization, and other factors. Additional analysis could involve the firm's competitive position in its industry, labor re-lations, technological changes, management, foreign competition, and so on. The end result of fundamental analysis at the company level is a good understanding of the company's financial variables and an assessment of the estimated value and potential of the company.

Investors could use the dividend discount model to value common stocks; alternatively, for a short-run estimate of intrinsic value, the earnings multiplier model could be used. Intrinsic (estimated) value is the product of the estimated earnings per share (EPS) for next year and the expected multiplier or P/E ratio,

**Stocks estimated value = V0 -/Estimated EPS X expected P/E ratio**

**The Balance Sheet:**

The balance sheet shows the portfolio of assets for a corporation, as well as its liabilities and owner's equity, at one point in time. The amounts at which items are carried on the balance sheet are dictated by accounting conventions. Cash is the actual dollar amount, whereas marketable securities could be at cost or market value. Stockholders equity and the fixed assets are on a book value basis.

It is important for investors to analyze a company's balance sheet, carefully. Investors wish to know which companies are undergoing true growth, as opposed to companies that are pumping up their performance by using a lot of debt they may be unable to service.

**Income Statement:**

This statement is used more frequently by investors, not only to assess current management performance but also as a guide to the company's future profitability. The income statement represents flows for a particular period, usually one year.

The key item for investors on the income statement is the after-tax net Income, which, divided by the number of common shares outstanding, produces earnings per share. Earnings from continuing operations typically are used to judge the company's success and are almost always the earnings reported in the financial press. Nonrecurring earnings, such as net extraordinary items that arise from unusual and infrequently occurring transactions, ate separated from income from continuing operations.

**The Cash-Flow Statement:**

The third financial statement of a company is die cash flow statement, which incorporates elements of the balance sheet and income statement as well as other items. It is designed, to track the how of cash through the firm. It consists of three parts:

1. Cash from operating activities
2. Cash from investing activities
3. Cash from financing activities

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The cash-flow statement can help investors examine the quality of the earnings. For ex-ample, if inventories are rising more quickly than sales, as happened in late 2000 and early 2001 for several companies, this can be a real sign pf trouble—demand may be softening. If a company is cutting back on its capital expenditures, this could signal problems down the road. If accounts receivable are rising at a rate greater than sales are increasing, a company may be having trouble collecting money owed to it. If accounts payable are rising too quickly, a company may be conserving cash by delaying payments to suppliers, a potential sign of trouble for the company.

**Ratio Analysis:**

Financial ratio analysis is a fascinating topic to study because it can teach us so much about accounts and businesses. When we use ratio analysis we can work out how profitable a business is, we can tell if it has enough money to pay its bills and we can even tell whether its shareholders should be happy.

Ratio analysis can also help us to check whether a business is doing better this year than it was last year; and it can tell us if our business is doing better or worse than other businesses doing and selling the same things.

In addition to ratio analysis being part of an accounting and business studies syllabus, it is a very useful thing to know anyway.

The overall layout of this section is as follows: We will begin by asking the question, what do we want ratio analysis to tell us? Then, what will we try to do with it? This is the most important question. The answer to that question then means we need to make a list of all of the ratios we might use: we will list them and give the formula for each of them.

Once we have discovered all of the ratios that we can use we need to know how to use them, who might use them and what for and how will it help them to answer the question we asked at the beginning?

At this stage we will have an overall picture of what ratio analysis is, who uses it and the ratios they need to be able to use it. All that's left to do then is to use the ratios; and we will do that step- by-step, one by one.

By the end of this section we will have used every ratio several times and we will be experts at using and understanding what they tell us. (Referred to Handout # 12)

**Types of Charts:**

Three principal types of charts are used by the technical analyst: line charts. Bar charts and point and figure charts. A forth type, the candlestick chart, has recently gained favor and may eventually become common. (Referred to Handout # 7)

**Investing Indirectly:**

Indirect investing in this discussion usually refers to the buying and selling of the shares of investment companies' that, in turn, hold portfolios of securities. Most of our attention is focused on investment-companies, arid mutual funds in particular, because of their importance to investors. However, we will conclude the chapter with a discussion of Exchange-Traded Funds (ETFs), which represent a bridge between direct and indirect

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investing. Investors buy ETFs like any other stock, but many ETFs can be compared to index mutual funds. (Referred to Handout # 20)

**Closed-End Investment Companies:**

One of the two types of managed investment companies, the closed-end investment company, usually sells no additional shares of its own stock after the initial public offering. Therefore, their capitalizations are fixed, unless a new public offering is made.

The shares of a closed- end fund trade in the secondary markets (e.g., on the-exchanges) exactly like any other stock.10To buy and sell, investors use their brokers, paying (receiving) the current price at which the shares are selling plus (less) broker age commissions.

**Open-End Investment Companies (Mutual Funds):**

Open-end investment companies, the most familiar type of managed company are popularly referred to as mutual funds and continue to sell shares to investors after the initial sale of shares that starts the fund. The capitalization of an .open-end investment company is continually changing—that is, it is open-ended—as new investors buy additional shares and some existing shareholders cash in .by selling their shares back to the company.

**Mutual funds typically are purchased either:**

1. Directly from a fund company, using mail or telephone, or at the company's office locations.
2. Indirectly from a sales agent, including securities firms, banks, life insurance companies, and financial planners.

Mutual funds may be affiliated with an underwriter, -which usually has an exclusive right to distribute shares to investors: Most underwriters distribute shares through broker/dealer firms.

Mutual funds are either corporations or business trusts typically formed by an investment advisory firm that selects the/board of trustees (directors) for the company. The trustees, in turn, hire a separate management company, normally the investment advisory firm, to manage the fund. The management company is contracted by the investment company to perform necessary research and to manage the portfolio, as well as to handle the administrative chores, for which it receives a fee.

**The Passive Strategy:**

A natural outcome of a belief in efficient markets is to employ some type of passive strategy in owning and managing common stocks. If the market is highly efficient, impounding information into prices quickly and on balance accurately, no active strategy should be able to outperform the market on a risk-adjusted basis. The efficient market hypothesis (EMH) has implications for fundamental analysis and technical analysis, both of which are active strategies for selecting common stocks. (Referred to Handout # 22)

**Buy-And-Hold Strategy:**

A buy-and-hold strategy means exactly that an investor buys stocks and basically holds them until some future time in order to meet some objective. The emphasis is on avoiding

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transaction costs, additional search costs, and so forth. The investor believes that such a strategy will, over some period; of time, produce results as good as alternatives that require active management whereby some securities are deemed not satisfactory; sold, and replaced with other securities. These alternatives incur transaction costs and involve inevitable mistakes. (Referred to Handout # 22)

**The Active Strategy:**

Most of the techniques discussed in this text involve an active approach to investing. In the area of common stocks, the use of valuation models to value and select stocks indicates that investors are analyzing and valuing stocks in an attempt to improve their performance relative to some benchmark such as a market index. They assume or expect the benefits to be greater than the costs. (Referred to Handout # 22)

**Degrees of Informational Efficiency:**

**1. Weak form Efficiency:**

The least restrictive form of the EMH is weak form efficiency, which states that future stock prices cannot be predicted by analyzing price from the past. In other words, charts are of no use in predicting future prices. (Referred to Handout # 23)

**2. Semi-strong Form:**

The weak form of the EMH states that security prices fully reflect any information contained in the past series of stock prices. Semi-strong form efficiency takes the information set s step further and includes all publicly available information. The semi-strong form of the EMH states that security prices fully reflect all relevant publicly available information. (Referred to Handout # 23)

**3. Strong Form Efficiency:**

The most extreme version of the EMH is strong form efficiency. This version states that security prices fully reflect all public and private information. In other words, even corporate insiders cannot make abnormal profits by exploiting their private; inside information about their company. Inside information is formally called material, nonpublic information. (Referred to Handout # 23)

**Bond Ratings:**

Bond Ratings are letters of the alphabet assigned to bonds by rating agencies to express the relative probability of default.

Corporate bonds, unlike Treasury securities, carry the risk of default by the issuer. Three rating agencies, Standard & Poor's (S&P) Corporation, Moody's Investors Service Inc., and Fitch Inc. provide investors with bond ratings; that is, current opinions on the relative quality of most large corporate-and municipal bonds, as well as commercial paper. As independent organizations with no vested interest in the issuers, they can render objective judgments on the relative merits of their securities. By carefully analyzing the issues in great detail, the rating firms, in effect, perform the credit analysis for the investor. ' Standard & Poor's bond ratings consist of letters ranging from AAA, AA, A, BBB, and so on, to D. Plus or minus signs can be used to provide more detailed standings within a given category.

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The first four categories, AAA through BBB, represent investment-grade securities. AAA securities are judged to have very strong, capacity to meet all obligations, whereas BBB securities are considered to have adequate capacity. Typically, institutional investors must confine themselves to bonds in these four categories. Other things being equal, bond ratings and bond coupon rates are inversely related.

Bonds rated BB, B, CCC, and CC is regarded as speculative, securities in terms of the issuer's ability to meet its contractual obligations. These securities early significant uncertainties, although they are not without positive factors. Bonds rated C are, currently not paying interest, and bonds rated D are in default.

**TYPES OF RISK:**

Thus far, our discussion has concerned the total risk of an asset, which is one important consideration in investment analysis. However, modern investment analysis categorizes the traditional sources of risk identified previously as .causing variability in returns into two general types: those that are pervasive in nature, such as market risk or interest rate risk, and those that are specific to a particular security issue, such as business or financial risk. Therefore, we must consider these two categories of total risk.

Dividing total risk into its two components, a general (market) component and a specific (issuer) component, we have systematic risk and nonsystematic risk, which are additive: (Referred to Handout # 32)

**Total risk = General risk + Specific risk**

* + **Market risk + Issuer risk**
* **Systematic risk + Nonsystematic risk**

**SOURCES OF RISK:**

What makes a financial asset risky? Traditionally, investors have talked about several sources of total risk, such as interest rate risk and market risk, which are explained below, because these terms are used so widely, Following this discussion, we will define the modern portfolio sources of risk, which will be used later when we discuss portfolio and capital market theory. (Referred to Handout # 32)

**Random Diversification:**

Random or naive diversification refers to the act of randomly diversifying without regard to relevant investment characteristics such as expected return and industry classification. An investor simply selects a relatively large number of securities randomly—the proverbial "throwing a dart at the Wall Street Journal page showing stock quotes. For simplicity, we assume equal dollar amounts are invested in each stock. (Referred to Handout # 34)

**Markowitz Portfolio Theory:**

Before Markowitz, investors dealt loosely with the concepts of return and risk. Investors have known intuitively for many years that it is smart to diversify; that is, not to "put all of your eggs in one basket? Markowitz however, was the first .to develop the concept of portfolio diversification in a formal way— he quantified the concept of diversification. He showed quantitatively why and how portfolio diversification works to reduce the risk of a portfolio to an investor. (Referred to Handout # 34)

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**Efficient Portfolios:**

Markowitz's Approach to portfolio selection is that an investor should evaluate portfolios on the basis of their expected returns and risk as measured by the standard deviation. He was the first to derive the concept of an efficient portfolio, defined as one that, has the smallest portfolio risk for a given level of expected return or the largest expected return for a given level of risk. Rational investors will seek ethcient portfolios, because these portfolios are optimized on the two dimensions of most importance to investors, expected return and risk. (Referred to Handout # 35)

**Capital Market Theory:**

Capital market theory is a positive theory in that it hypothesis how investors do behave rather than, how investors should behave, as, in the case of Modem Portfolio Theory (MPT). It is reasonable "to view capital market” theory; as an extension of portfolio theory, but it is important to understand that MPT is not based on the validity, or lack thereof, of capital market theory. (Referred to Handout # 36)

**The Market Portfolio:**

Portfolio M is called the market portfolio of risky securities. It is the highest point of tangency between RF and the efficient frontier and is the optimal risky portfolio. All investors would want to be on the optimal line RF-M-L, and, unless they invested 100 percent of their wealth in the risk-free asset, they would own portfolio M with some portion of their investable wealth or they would invest their own wealth plus borrowed funds in portfolio M. This portfolio is the optimal portfolio of risky assets. (Referred to Handout # 36)

**Arbitrage Pricing Theory:**

**An equilibrium theory of expected returns for securities involving few assumptions about investor preferences**

(Referred to Handout # 37)

**Performance Measurement:**

The portfolio management process is designed to facilitate making investment decisions in an organized, systematic manner. Clearly, it is important to evaluate the effectiveness, of the overall decision-making process. The measurement of portfolio performance allows investors to determine the success of the portfolio management process and of the portfolio manager. It is a key part of monitoring the investment strategy that was based on investor objectives, constraints and preferences. (Referred to Handout # 38)

**Derivatives:**

Derivative assets get their name from the fact that their value derives from some other asset. A coupon for a free Big Mac is not inherently valuable; the paper on which it is printed is virtually worthless. We all agree that the coupon is valuable for what it represents: the chance to get a $ 2.50 sandwich for nothing. The coupon is a simple derivative asset. (Referred to Handout # 40)

**The Futures Market:**

A futures contract is a promise; the person who initially sells the contract promises to deliver a quantity of a standardize commodity to a designated delivery point during a certain month called a delivery month. The other party to the trade promises to pay a predetermined price for the goods upon delivery. The person who promises to buy is said to be long; the person who promises to deliver is short.

**Understanding Futures Markets:**

(Referred to Handout # 41)

**Market Participants:**

Two types of participants are required in order for a futures market to be successful: hedgers and speculators. Without hedgers the market would not exist, and no economic function would be performed by speculators. (Referred to Handout # 41)

**Uses of Derivatives:**

(Referred to Handout # 44)

**Options:**

Which represent claims on an underlying common stock, are created by investors and sold to other investors? The corporation whose common stock underlies these claims has no direct interest in the transaction, being in no way responsible for the creating, terminating, or executing put and call contracts.

**Contracts giving the owner the right to buy or sell the underlying asset**