

FISCHER BLACK'S GLOSSARY FOR FINANCE

JANUARY 1983

p. 15 Date Spread
p. 66

100% reserves

A simple way to regulate banks is to require that deposits be backed at all times with government securities of equal value. A similar method can be used for other financial institutions.

The banks can issue stock and bonds to raise the money for loans.

Accounts payable

A firm's accounts payable are the amounts due in the near future to its suppliers and other creditors. One firm's account payable is another firm's account receivable.

Accounts receivable

A firm's accounts receivable are the amounts due from its customers and other amounts due in the near future. The market value of its accounts receivable may be less than the stated value, because some customers may refuse to pay. For example, some customers may have the right to return goods that are recorded as sold, and other customers may demand refunds because the goods or services were of low quality.

Agency costs

Agency costs are management costs: the cost of inducing others to act in your interests.

Managers are agents for stockholders and bondholders. Employees are agents for supervisors, and supervisors are agents for employees. Majority shareholders are agents for minority shareholders.

American option

An American option is one that can be exercised at any time before maturity, while a European option can be exercised only at maturity. In the United States, most simple options are American. But American options are common in Europe, and European options can be found in the United States. One reason that American options are so common is that the ability to exercise at any time makes the option seem less like simply a way of creating leverage.

Asked price

An asked price is the price at which a specialist or market maker is willing to sell a security, either for his own account or for the account of a customer. A bid price is the price at which a specialist or market maker is willing to buy a security. When a specialist or market maker handles an order for a customer, it is usually a limit order that has been brought in by a retail broker. Limit orders may also be handled by exchange employees, or by board brokers. The price on a limit order to sell handled in this way is an asked price too.

Asset

An asset is anything of value in the economy. Assets may be tangible, like a file cabinet, or intangible, like the knowledge of a brand name among customers and potential customers. Assets may be real, like a building, or financial, like a bank deposit. A portfolio of assets is also an asset. Assets may be held by individuals or businesses or governments, but all assets are ultimately held for the benefit of individuals, either living or yet to be born.

Available information

Information is available if it is widely enough known and understood that further disclosure would not affect the prices of any assets. Most of the time, it seems that telling something to a few people makes it available. For example, more often than not information a firm feels is significant will already have been discounted by the time the firm announces it publicly.

Bankruptcy

Bankruptcy occurs when a firm is unable to make payments specified in its contracts, or when it violates the terms of those contracts in some other way and cannot work out an agreement with the other party. For example, a debt contract may require that the firm maintain a certain level of working capital. When bankruptcy occurs, it may pay to liquidate the firm, but more often it pays to sell or recapitalize the entire firm as a going concern. The holders of the old liabilities of the firm are then paid off in order of their priority. The largest costs of bankruptcy are usually caused by the disruption to the firm's normal activities while it works out its legal problems. Lawyers' fees can be large, too, but are usually modest compared to the costs caused by disruption of the business.

Bet

Bets are positions taken by investors that will show profits or losses from changes in things like expected commodity prices, expected interest rates, expected total risk or volatility, and expected exchange rates. Investors may also bet on less basic things that they care about. Investors want to make these bets because they differ in their feelings about these changes. For example, some people are more sensitive to changes in the rate of inflation than others, so they may be willing to pay to take a position that eliminates some of their risk. Others who are less sensitive may be happy to take more of the risk in exchange for the payment.

Beta

An asset's beta is a measure of its sensitivity to changes in asset values generally. A beta of 0.5 means that a 1% increase (or decrease) in the market in the short run implies a 0.5% increase (or decrease) in the value of the asset. Choosing a different market portfolio gives a different value for beta, so there is always considerable uncertainty about what the beta of an asset really is.

For a given market portfolio and an asset with daily prices available, we can use daily data to give accurate estimates of what the asset's beta has been. We may need to make adjustments if the asset trades infrequently.

Bid price

A bid price is the price at which a specialist or market maker is willing to buy a security, either for his own account or for the account of a customer. An asked price is the price at which a specialist or market maker is willing to sell a security. When a specialist or market maker handles an order for a customer, it is usually a limit order that has been brought in by a retail broker. Limit orders may also be handled by exchange employees, or by board brokers. The price on a limit order to buy handled in this way is a bid price too.

Bid-asked spread

Suppose an investor enters a market order to buy a stock followed immediately by a market order to sell the same amount of the same stock. (Or a market order to sell followed by a market order to buy.) The buy price minus the sell price is the bid-asked spread for that amount of stock. Sometimes the bid-asked spread is called the dealer spread or the specialist's quote. The bid-asked spread accounts for part of the cost of trading. It is a part that is not as easy to measure or control as the commission.

Call option

A call option is an option to buy the underlying asset by paying the exercise price, while a put option is an option to sell the underlying asset for the exercise price. A call option goes up when the underlying asset goes up. Buying a call option is a substitute, in the short run, for borrowing to buy the underlying asset. Mixing call options with lending is a substitute, in the short run, for buying the underlying asset. An exchange traded American call option should generally be exercised early only just before a substantial dividend on the underlying asset.

Call price

The call price for a bond is the price at which the issuer can redeem the bond prior to maturity. For example, the issuer may be allowed to call a bond with a face value of \$1000 at \$1100 when the bond will mature in 20 years. The call price normally declines as the bond approaches maturity.

Capital

The capital in the economy includes both physical capital and human capital; both tangible assets and intangible assets. The capital stock changes because of consumption and new investment, but the most important reason for changes in the capital stock is changes in the value of existing capital. There are also events like war and expropriation that can cause dramatic changes in a country's capital stock.

Capital asset pricing model

The capital asset pricing model says that the expected excess return on an asset is its beta times the expected excess return on the market portfolio. The interval over which the returns are measured can in principle be any length, but the model makes more sense if the interval is taken as very short. The model assumes that all assets are marketable, and that everyone can borrow or lend freely at a single riskless interest rate, so we don't expect it to be strictly true. It also ignores premiums on bets on such things as future commodity prices and future interest rates. It's very hard to test the model on actual securities, because expected returns are not observable, because the composition of the market portfolio is not known, and because foreign assets should be partly in and partly out of the market portfolio.

Capital gain

The capital gain on an asset is the price at which you sell it (or could sell it) minus the price at which you buy it (or could buy it). If you have bought it and sold it, the gain is realized. If you have bought it but haven't sold it (or if you have sold it but haven't bought it), the gain is unrealized. The capital gain on an asset is only part of its return.

Capital structure

A firm's capital structure may be defined narrowly as the values of its various liabilities, or broadly as the values of its various liabilities and financial assets. The values may be given at market value or at book value.

For most firms, common stock and debt in the form of bonds or loans are the main elements of a firm's capital structure. In that case, the market or book debt/equity ratio tells much about the firm's capital structure.

Sometimes assets and liabilities not on a firm's balance sheet may be included in describing its capital structure. For some purposes, both pension liabilities and pension assets may be included, when the firm has a defined benefit pension plan.

Cash dividend

One way for a firm to give something of value to its shareholders is to pay a cash dividend. It is sometimes said that the value of a stock is the discounted value of its future dividends. But there are other, equally good ways for a firm to give something of value to its shareholders. For example, a firm can buy back its stock in the open market, or it can make a tender offer for its stock. A single owner of a firm can take an exceptionally high salary, or can cause the firm to buy goods or services at inflated prices. A firm's stock will have value even when there is no plan to pay a cash dividend, if only because there is always the potential for future dividend payments. A stock's yield is a measure of the rate at which it is currently paying cash dividends.

Cash flow

A cash flow for an asset is a payment made to the owner of the asset (which normally reduces the value of the asset by about the amount of the payment), or an investment in the asset by the owner (which normally increases the value of the asset at the time the investment is made by about the amount of the investment). Cash flows for a firm or individual are the raw data from which smoothed figures such as earnings are calculated. The cash flows from a common stock include the purchase price, the dividends, and the sale price. They may also include the tax changes resulting from the dividends and the sale of the stock.

Certain return

A certain return for a given period is the return at the riskless interest rate for the period. For example, if lending \$100 for two years to a borrower who is sure to repay the loan gives an interest rate of 10% per year (when both principal and interest are repaid when the loan matures), the certain return on the loan for the two year period is 21%. Of course, no loans are really riskless, including loans to governments, and so no returns are really certain.

Claim

A claim on a firm is a liability of the firm. Claims include common stock, preferred stock, long term bonds, commercial paper, bank loans, and judgments awarded by the courts to people claiming that the firm injured them. Claims can also include potential liabilities such as payments to lawyers which are made only if the firm becomes bankrupt.

Closed end investment company

The liabilities of a closed end investment company can be worth more or less than its assets, but normally they are worth less. The reasons for this discount are not known. These companies rarely issue new shares unless the discounts have become premiums, at least for the time being. Buying shares of a closed end fund at a discount seems better than buying shares of an open end fund at net asset value, if the size, expenses, and other characteristics of the two funds are the same. A closed end fund at a discount can eliminate the discount immediately by converting to an open end fund. They often do not do that because the managers of the fund fear that total assets and thus total management fees will decline if the fund starts redeeming its shares continuously. They may also fear the loss of control that merger with a large open end fund would bring.

Closing out a short position

An investor closes out a short position when he delivers an asset just like the one he sold when he created the short position. If it's a short position in a stock, he closes it by delivering identical stock to the person who lent him the stock. If it's a short position in an exchange traded option, he can buy an identical option in the market and the clearing corporation will cancel his long and short positions. The exercise of an option will also cause the writer to close out his short position, but in this case he does it by delivering the underlying asset (if it's a call option) or by accepting delivery of the underlying asset and paying for it (if it's a put option).

Commission

The commission on a trade is part of the total trading cost. The other part, which is less obvious, is related to the bid-asked spread. The bid-asked spread for a trade depends in part on the price effects of the trade, which depend in turn on the size of the trade, the typical volatility and trading volume of the stock, and the likelihood that the trader has information that will affect the price of the stock when it has been discounted. In many cases the commission is less than half the total trading cost.

Commodity option ?

A commodity option may be an option to buy the underlying commodity, but more often it is an option to enter into a futures contract and receive a payment equal to the futures price minus the exercise price. If it were a put option, it would be the exercise price minus the futures price. The futures contract specified by the option contract will, of course, have a longer maturity than the option. An investor must put up collateral to write a commodity option, but not to buy one. If he deals in futures contracts, though, he must put up collateral on either side of the contract. A commodity option gives one way to bet on changes in the expected future price of a commodity.

Commodity price bet

A commodity price bet shows gains or losses when there are changes in the expected price of the good or service that is the basis for the bet. It's easier to make bets on the future prices of goods than on the future prices of services, because part of the bet must be a definition of exactly what good or service is being priced. One way to bet on commodity prices is to take a long or short position in a futures market. Another is to buy or sell a commodity option. A third way is to enter into a contract to buy or sell a specified amount of the commodity at a specified price on a specified date. If one person must pay to take one side of a commodity price bet, then it's not neutral. We say there is a premium on the bet, because one person gains and the other loses even if the actual future commodity price turns out to be equal to the currently expected price. There can be a whole term structure of commodity price bets, since there can be a bet on the expected price on each of many future dates.

Competitor

Polaroid and Eastman Kodak are competitors in instant photography. Each is trying to take sales away from the other, and would be pleased if the other were to stop competing in that field. Nevertheless, the returns on their common stocks are highly correlated. Developments favorable to instant photography or to photography as a whole will cause both their stocks to go up, and unfavorable developments will cause both to go down. Developments of that kind are much more common than developments that imply good things for one firm and bad things for the other.

Consumer goods and services

Consumer goods and services are those that are used up in the current period. The others are investment goods and services. Consumer goods and services include both things that consumers use directly and things that the government uses for the benefit of consumers. For example, a car is an investment good, but the service provided by a car is a consumer service. The flow output of the economy can be divided roughly between consumer goods and services and investment goods and services.

Continuity

A securities market has continuity if successive trade prices don't differ very much. For example, many trades might be at the same price as the preceding trade, and most might be priced within an eighth or a quarter of the preceding trade. Continuity is affected most by the frequency of trades and by the underlying volatility of the stock, which depends on the rate at which information affecting that stock arrives in the market. Continuity may also be affected by the organization of a market and by the behavior of the specialist or market makers in the market. It is not in itself a desirable trait of a market, since a market that responds rapidly to new information may show a lack of continuity.

Continuous market

A continuous market is one in which an investor can almost always find a buyer or seller, at least while the market is open. This may not do him much good, though, if the price at which he can buy is far above the price at which he can sell. Sometimes, a continuous market means one where an investor can almost always find a buyer or seller at a price close to the price of the last trade.

Convertible bond

A convertible bond is like a straight bond with one added feature. The bondholder can exchange his bond at any time for a given amount of common stock. When the issuer of a convertible bond exercises his option to call the bond, the holder of the bond may exercise his option to convert it to common stock. He will normally do this only when the value of the common stock is greater than the call price. A convertible bond is less risky than stock, but more risky than a comparable straight bond. A convertible bond will always be worth more than an otherwise identical straight bond, but that doesn't mean that there is a solid floor for the convertible's price. If conditions were bad enough, the straight bond (and the convertible bond) might be worth nothing at all.

Corporate bond

A corporate bond is a liability for the issuer. The corporation promises to pay interest and principal to the bondholders at specified future times. The corporation may have the right to buy the bond back and avoid further payments. The bondholder may have the right to exchange his bond for a certain amount of the corporation's common stock. If the corporation fails, the bondholders are generally paid for their bonds before the stockholders receive anything. The corporation is not allowed to do certain things (such as paying a large dividend) that would help the stockholders and hurt the bondholders.

Correlation

The correlation between the return on firm A's stock and the return on firm B's stock indicates how closely related the two firms are. Two firms in the same business are closely related and will have a high correlation, even though they compete for customers, workers, and machines. The correlation is defined as the covariance between the return on stock A and the return on stock B, divided by the standard deviation of the return on stock A and the standard deviation of the return on stock B. Past correlation can be estimated accurately using daily data, if we take account of the effects of infrequent trading.

Cost of capital

The cost of capital for a proposed investment is the expected return on the investment starting from its initial value. The initial value of the investment may be greater than or less than the cost of the investment, and it's important not to use cost in this calculation. A firm does not have a cost of capital: only an existing or proposed investment does. Unfortunately, the cost of capital for a proposed investment is not observable, and is very hard to estimate. It's even hard to estimate the expected return on an existing security. So rather than trying to derive a cost of capital to use in discounting the cash flows of a project, it may make sense to move more directly to an estimate of the value of the project and then to compare the value with the cost.

Dealer

A dealer buys and sells the assets he specializes in continuously. The difference between his buying price and his selling price is the dealer spread or bid-asked spread. In some cases he also charges a commission. One kind of dealer is a specialist, who is chosen by an exchange to make a market in a security. Another kind is a market maker who competes with other market makers either on or off an exchange floor.

Dealer spread

?
The dealer spread is the same as the bid-asked spread. It is the difference between the price at which a dealer will sell a security and the price at which he will buy. The dealer spread depends on size: it will normally be larger for 1,000 shares than for 100 shares, and it may not even exist for 100,000 shares. The dealer spread represents part of the total cost of executing a trade.

Debt

From a legal point of view, a firm's debt includes liabilities such as straight bonds, convertible bonds, and bank loans. Interest payments on liabilities like these are deductible in computing taxable income. Equity includes liabilities such as common stock and preferred stock. Dividends on liabilities are not deductible. From a financial point of view, debt includes any liability where promised payments that are likely to be made give the liability most of its value. This includes most preferred stock, but omits very risky bonds such as convertibles selling well above face value.

Demand loan

A demand loan is one where the lender can demand payment in full at any time. Normally the lender will give plenty of notice before he actually demands payment of the principal of the loan, because he knows it may take time for the borrower to find a new lender or to raise the money in some other way. However, the lender will not hesitate to change the interest rate charged on the loan, either because interest rates generally have changed, or because the risk of default has changed. The interest rate on a riskless demand loan is the shortest of short term rates.

Depth

An asset market has depth if it is possible to buy or sell a large amount of the asset without affecting the price very much. A market with lots of trading is likely to have depth. It's possible for a specialist or market maker to give a market depth, even when there isn't much trading, if he is willing to carry a large position for a long time. But if large buyers and sellers are typically trading on information that is not yet reflected in the market price, it makes sense for the trade to affect the price.

Disclosure

Forced disclosure hurts a firm, because it helps the firm's rivals. It discourages investment in information that will have to be disclosed.

Forced disclosure of existing information helps society, by allowing others to use the information without cost. But this gain is elusive, because a policy of forced disclosure will cause much information not to be produced at all.

Society gains when information is disclosed that helps in valuing the stocks of different firms. The accounting system, when it works well, allows the release of this kind of information without the release of specific information that is most helpful to rivals.

Discounting of cash flows

Discounting of future cash flows is dangerous because the future amounts are usually so uncertain and because the right discounting procedure may be hard to find. If the future cash flows are certain and their tax status is the same as the tax status of cash flows from bonds, then we may be able to use the prices of traded bonds to discount the cash flows. If the cash flow projections are made under the assumption that the equilibrium expected return on every asset similarly taxed is the short term interest rate, then we may be able to take the expected future cash flows and discount the expected values as if they were certain.

More generally, we can take the cash flows that we would expect if the return on the market were equal to interest in each period prior to the cash flows, and discount them at the interest rate. We will assume the return on the market is at the after-tax interest rate, and we will discount after-tax cash flows at the after-tax interest rate.

Discounting of information

When asset prices fully reflect a piece of information, we say that the information has been discounted. If the information were widely known and understood, the prices of all assets would be the same as they are today. In an efficient market, all available information is fully discounted.

Diversifiable risk

An asset's diversifiable risk is that part of its total risk that become unimportant when the asset is held as part of a large portfolio. If a very large number of assets having only diversifiable risk were put together into a portfolio, the return on the portfolio would be nearly certain. The diversifiable risk of an asset does not affect its expected return, because investors do not have to be paid to bear it. That part of an asset's risk that is not diversifiable is called systematic risk.

Diversification

Diversification means adjusting a portfolio so that it has less specific risk. The more securities a portfolio has, and the less they have in common with one another, the more diversified the portfolio is likely to be. If a market portfolio were available, it would be a fully diversified portfolio. Perhaps the hardest parts of diversification are dealing with the specific risk of human capital and the risk in foreign assets. Diversification eliminates risk that investors are not paid to bear, and leaves risk that they are paid to bear. It may also leave risks that individuals are willing to pay to bear, such as bets on future commodity prices and interest rates. Diversification includes both asset diversification and time diversification.

While diversification has direct benefits for an individual, its benefits for a corporation are indirect. The holders of a corporation's stock will usually hold it as part of a portfolio of stocks, so they can have diversified portfolios even though the corporation's assets are not diversified. But a better diversified corporate portfolio of assets will allow more debt or reduced costs of possible bankruptcy, and will thus reduce the firm's cost of capital.

Dividend

A dividend is an amount of cash or other assets paid to a firm's stockholders. A dividend that is not a cash dividend is a stock dividend or a distribution of assets. When a dividend is paid, the price of the stock drops by about the amount of the dividend, so the dividend does not in itself make a stockholder better off. Larger cash dividends may cause the stock price to go up by signalling that the firm's officers and directors feel that the firm's future cash flows will be large and stable enough to support the dividend. On the other hand, larger cash dividends cause higher taxes for many stockholders. A firm with risky debt outstanding may be able to increase its stock price by increasing its dividend, because it is shifting its assets in part from the lenders to the stockholders.

Dollar return

The dollar return on an asset is the change in its price or value over a specified period plus the value of any distributions, such as dividends or interest, paid to holders of the asset during the period. The dollar return may be of more interest on an asset such as an option than the return expressed as a fraction or percentage, because the price of the asset can be small and can change very rapidly.

On a forward or futures contract, the dollar return must be used, because the initial price of the contract is zero. And it must be used for a short position because the investment in a short position is negative (ignoring collateral and margin requirements).

Earnings

The earnings of a firm are figured from verifiable data such as past cash flows of the firm. The accounting rules for figuring earnings seem designed to give a figure that can be multiplied by a price-earnings ratio to give an estimate of the value of the firm. Thus the earnings figure is designed to be proportional to the value of a firm, rather than to measure the actual or expected change in the firm's value.

Efficient market

An efficient market is a market in which asset prices reflect all available information. No market is fully efficient: the more available a piece of information is, the more efficient markets will be with respect to that information. In an efficient market, it is not possible to make trading profits using available information.

It's hard for an investor to make trading profits using available information, but it's also hard for him to lose money trading on no information, at least gross of expenses. So he can choose securities for reasons other than the attempt to use trading profits. Similarly, it's hard for a corporation to issue stock at the wrong time, if the information it has is available to others. If it has a good investment opportunity, issuing stock to finance it will pay.

It is sometimes possible to infer available information from market prices in an efficient market. For example, a firm's stock price may tell us something about how attractive its opportunities are, and the volatility of its stock price may tell us something about how risky they are. Normally, however, there is no way to test whether a market is efficient. We can hope to prove that a market is inefficient by showing a way of earning a consistent return greater than the short term interest rate. But we can never prove a market efficient: the best we can do is to keep ruling out proposed inefficiencies.

Even though we can't prove that any market is efficient, theory suggests that the efforts of traders to take advantage of any profit opportunities they see will tend to make markets efficient. Such traders can make trading profits, though, only if someone is willing to make trading losses, so market efficiency depends on the existence of fools, gamblers, and liquidity traders along with rational information traders.

The more efficient markets are, the better the investment decisions made by firms will be. So it may pay to encourage efficiency, even when that involves complex government regulations designed to force disclosure of important information.

Efficient portfolio

An efficient portfolio is a diversified portfolio. It's sometimes called an efficiently diversified portfolio. It is a portfolio with no unnecessary risk. If an individual cares only about the expected return and total risk of a portfolio of securities, then an efficient portfolio for him is a portfolio that has the highest expected return of all portfolios with the same total risk, and the lowest total risk of all portfolios with the same expected return. There can be many efficient portfolios in this sense: some with low risk and low expected return, and some with high risk and high expected return. When an individual has assets he can't sell such as human capital, and when he cares about things like future commodity prices and interest rates, it becomes harder to define an efficient portfolio.

Endowment fund policy

So long as an endowment fund is receiving sizable gifts, the most important factor in investment policy is attracting more and larger gifts. While tax factors would normally imply that the fund be invested entirely in bonds, the gift factor will normally suggest at least some investments in common stock. Few donors would consider an all bond portfolio appropriate.

Equally weighted market index

An equally weighted market index is based on a portfolio where every stock has an equal dollar investment. The percentage change in the index is the average of the percentage change in each of the component stocks.

European option

A European option can be exercised only at maturity, while an American option can be exercised at any time before maturity. It is not clear how these options got their names. In the United States, most simple options are American, but there is no obvious economic reason for that. European options would serve as well in almost all uses for options, and the use of European options would avoid the disruptions that occur when an American option must be exercised early.

Excess return

The excess return on an asset is the return on the asset minus interest at the riskless rate for the period. In other words, it's the difference between what a holder of the asset received and what he would have received had he lent his money instead at the riskless interest rate. The excess return can be either positive or negative.

Exchange

An exchange is a focal point for trading in any security listed on it. Buyers and sellers can find one another through the exchange floor, or through electronic systems tied to the exchange floor. An exchange normally provides continuous trading in each of its securities while it is open, and reports the prices of all trades that make use of the exchange. It provides other services too, such as the storage and execution of limit orders.

Exchange floor

An exchange floor is a place where investors and their agents meet to trade securities in person. Often it provides a focus for trading in a security so that buyers and sellers can easily find one another. Person-to-person trading differs from electronic trading in many of the ways that the use of currency differs from the use of credit cards: no matter how fancy the systems for electronic trading become, there will always be a place for person-to-person trading.

Exchange rate bet

One way to bet on changes in expected future exchange rates is to hold foreign currency. The trouble with that way is that currency does not bear interest. Another is to take a position in a forward or futures market for the currency. Betting on exchange rates is one way to bet on the differences between foreign and domestic inflation, since exchange rates are closely related to the ratio of domestic prices to foreign prices of similar goods. It's not known whether there are generally any premiums on exchange rate bets. It may be that the expected changes in an exchange rate futures price is generally near zero. It's possible to bet on exchange rates as of many future dates.

Exchange traded option

With an exchange traded option, the writer has a contract with an options clearing corporation, and the clearing corporation has a contract with the buyer. This means that the buyer can sell without disturbing the writer's position, and the writer can buy in without disturbing the buyer's position. To make this possible, options are standardized by maturity date and exercise price, and there is a continuous market (during trading hours) in each standardized option. Because the exercise price is standardized, there is normally no adjustment for cash dividends. The terms of the options are adjusted, however, for substantial stock dividends. When a buyer decides to exercise an exchange traded option, the clearing corporation assigns an exercise notice randomly to one of its members, and a writer is eventually chosen to deliver the underlying asset. Exchange traded options don't exist on all listed securities, in part because of the cost of maintaining continuous markets in a security's options. Even when they do exist, an investor may not be able to take a large position because of position limits set by the exchanges and the government.

Exercise

An option is exercised when the holder of the option buys the underlying asset at the exercise price or strike price specified in the option contract. It usually pays to exercise a call option before maturity only when the underlying asset is about to decline in value (as it does when a large dividend is paid). It may pay to exercise a put option early whenever the price of the underlying asset falls far enough below the exercise price. Selling an option can be a good substitute for exercising it, and the writer of an option may buy it back to avoid receiving an exercise notice.

Expected excess return

The expected excess return on an asset is the expected return on the asset minus interest at the riskless interest rate for the period. It's also the expected or average value of the excess return. In the capital asset pricing model, the expected excess return on an asset is the asset's beta times the expected excess return on the market.

Expected return

The expected return on an asset is the expected terminal value of the asset, plus any expected cash flows on the asset, minus the initial value of the asset, expressed as a fraction of the initial value of the asset. While the promised return on a security depends on the total risk of the issuer, the expected return depends mostly on that part of the risk that can't be diversified away. Since investors don't have to bear that part of the risk, they don't have to be paid for bearing it unless the asset is sensitive to a non-market risk that bears a risk premium. (Interest rate risk may be an example of such a non-market risk.) Expected return can be divided into interest and risk premium. The interest is what investors would receive if they lent a comparable amount of money. The risk premium is what investors must be paid to bear the relevant part of the asset's risk.

Face value

Bun A bond may be worth more if the firm goes bankrupt - the K gain comes earlier.

The face value of a bond is the amount that the bondholder receives when the bond matures. It is also his claim on the issuer in the event of bankruptcy. Finally, the prices at which the issuer can redeem the bond before maturity are set in relation to the face value of the bond.

FIFO

FIFO means first in, first out inventory accounting. When an item is sold from inventory, the cost assigned to that item is the cost of the first similar item bought for inventory. When the cost of similar items is rising, FIFO will normally give a lower cost than LIFO. Thus it will give higher income for accounting or tax purposes.

Financial leverage

A firm has high financial leverage if it has lots of debt in its capital structure. The debt can come in the form of long term bonds and bank loans, or in less obvious forms such as long term leases or purchase commitments. As a first approximation, the amount of financial leverage a firm has is more a matter of form than a matter of substance. Changes in the financial leverage of the firm can be made in a way that leaves both the value of the firm and the per-share value of cash of the claims on the firm roughly unchanged.

Flow output

The flow output of the economy is like dividends on common stock. Some modes of production cause high current output but deplete the capital stock so that future output is lower than it might otherwise be. Other modes of production cause low current output but preserve the existing capital stock. Unexpected changes in the value of the existing capital stock probably say more about how the economy is doing than variations in the level of flow output. However, changes in the value of the existing capital stock and changes in the level of flow output will be correlated.

Forward contract

When two people enter into a forward contract for a commodity, one agrees to buy the commodity from the other at a specified price on a future date. The description, location, and amount of the commodity are made part of the contract, but need not be standardized, because there is no continuous secondary market for the contract. The initial value of the contract is zero, but it can have either a positive or negative value later on. Each person may put up collateral to guarantee that he can do what the contract says he will do. No money changes hands until the commodity is delivered at maturity. With a futures contract, on the other hand, the contract price is changed each day to the then current futures price, and the loser for the day pays the winner. They start even with each new day.

Frictions

Frictions include trading costs, taxes, selling costs, information costs and management costs.

In a world without frictions, investors would mix holdings of index funds with borrowing or lending, at least as a first approximation. As a second approximation, they might bet on changes in interest rates or on changes in the volatility of the market.

In a world without frictions, all borrowing and lending would be on a demand basis through banks. Bank deposits would be close to riskless. Debits and credits would be applied to positive or negative bank accounts. Some debits would make a positive account negative, and some credits would make a negative account positive.

Fully efficient market

A fully efficient market is a market in which everyone has all available information, and prices reflect that information. A different concept of "available information" will give a different definition of "fully efficient market." In a fully efficient market, there can be no trading profits. Moreover, market prices will not tell any person something that person does not already know.

Fund

A fund is an investment company, a pension fund, an endowment fund or some other large portfolio managed for the benefit of a number of people. A closed end fund is a closed end investment company, and an open end fund is an open end investment company or mutual fund.

Futures contract

When two people enter into a futures contract for a commodity, one makes a tentative agreement to buy the commodity from the other at a specified price on a future date. The description and location and amount of the commodity are standardized. The initial value of the contract is zero, but each person must generally put up collateral to make it likely that he can cover any losses. On the next trading day, the specified price in the contract is changed to the last price at which a new position was opened on that day. If the price has gone up, the person on the short side of the contract pays the person on the long side the difference between the two prices. If the price has gone down, the payment goes the other way. The two people are always even. Either one can terminate his risk by going into the market and taking the other side of a new contract with a third person. In effect, the third person takes his place in the original contract. In a forward contract, on the other hand, there is no day-by-day settlement. The original contract price is not changed, and no money changes hands until the commodity is delivered at maturity.

Futures market

Futures contracts are opened and closed in a futures market. Futures contracts can't exist without a futures market, because it's the closing price in the futures market that determines how much the loser in a futures contract will pay the winner each day. The closing price is the price specified in the last futures contract opened during the day. Futures market rules frequently limit the amount by which the futures price can move during a single day. It's not known what the real reason for this is, but it does limit the amount that the loser has to come up with the next day. It also stops most trading when the price at which people would like to trade is beyond the day's limit. This costs the exchange money, at least in the short run, because total trading is reduced.

Human capital

Human capital is what gives a person earning power. It gives him the ability to work at a variety of jobs, where the job that pays him the highest wage at any time will depend on the circumstances at that time. Individuals invest in human capital by going to school and by taking jobs that provide valuable experience even if the pay is low. Human capital can't be sold, because that would greatly change an individual's incentives to work. Since there is no market for human capital, it is hard to estimate its value. It's even hard to define the value of human capital, because its characteristics would change if it were marketable.. An individual making investments in human capital looks at both the level of his wages and the changes that occur in the risk associated with his future wages.

Income

Income from an asset can be defined as (1) the return on the asset over a given past interval, including both realized and unrealized capital gains; (2) the expected return on the asset over some future interval; or (3) the cash flows from the asset over a given interval. For example, the income from a common stock might be defined as the actual return on the stock, the expected return on the stock, or the dividends on the stock. Other definitions are possible too, such as defining the income or earnings of a firm by smoothing out the firm's cash flows using accounting rules. The past return on an asset can be observed when the asset's value is known at the start and the end of the interval. The cash flows from an asset can usually be observed too. But the expected return on a risky asset cannot be observed, so if that definition is chosen, we can have at best very poor estimates of the income from the asset.

Index fund

An index fund is a portfolio managed so that its return will almost always be close to the return on a market index, such as the Standard & Poor's 500 Stock Index. One way to match an index is to hold all the stocks in the index, weighting them the same way they are weighted in the index. Another is to hold all the stocks in the index except a few that are thought to be in danger of bankruptcy. A third way is to use complex statistical rules for selecting a smaller group of stocks that is likely to act the same as all the stocks in an index. The advantages of an index fund are wide diversification and low turnover. There is no reason to believe, however, that an index fund is better than other portfolios with wide diversification and low turnover. It seems to have marketing advantage, though, among customers familiar with the index being matched.

Inflation

The rate of inflation is the average rate at which the prices of consumer goods and services are increasing. When the rate is negative, we have deflation. There are many ways to take the average, each of which will give a different rate of inflation. For many goods and services it is difficult to measure the prices, because both prices and the non-price terms of a sale may be changing rapidly. Thus measured rates of inflation should not be taken too seriously. Changes in short term interest rates may give more information than changes in the measured rate of inflation about changes in the average price of consumer goods and services.

Information

When information arrives in a market, asset prices change. Information includes facts, like the resignation of a key officer in a firm, and new interpretations of previously known facts, like an analysis of the impact of declining rates of population growth on sales of running shoes. The rate of arrival of information on a stock determines the volatility of the stock. Information most often affects the general level of the market or the prices of a whole group of stocks, but can sometimes be specific to a single firm.

Information trading

Information trading is the attempt to make trading profits. Trading that is not information trading is liquidity trading. An information trader is acting on information that he believes the market has not yet discounted, while a liquidity trader is trading because of changes in his wealth, changes in the risks and expected returns from various investment opportunities, and changes in his tastes for the various risks he can take on. Information trading should change prices of risky assets, while liquidity trading, if it is known not to be motivated by information, should not. If markets are efficient, information trading will not pay. Information traders are more likely to use market orders than liquidity traders, because they want to trade before their information is discounted. Liquidity traders are more likely to use limit orders.

Inside information

Inside information is information that is not yet available: information that has not had its full effect on market prices. The officers and employees of a firm and their relatives and friends are the most likely to have inside information about the firm, but customers, competitors, and suppliers may also have such information. Under certain circumstances, trading on inside information is illegal. Even when it is not illegal, trying to trade on inside information may be unwise, because it's hard to tell inside information from information that has already been discounted.

Interest rate

Riskless lending earns dollars at the interest rate. The amount of interest earned depends on the time the money is lent as well as the interest rates that apply while the loan is outstanding. The interest rate is nominal; when adjusted for inflation it is called the real interest rate.

Interest rate bet

An interest rate bet shows gains or losses when there are changes in expected future interest rates. One way to bet on interest rates is to buy or sell bonds or notes. Another is to deal in futures or options on bonds or bills. Betting on interest rates is one way to bet on future rates inflation, since interest rates depend heavily on expected rates of inflation. It's generally believed that people who buy long term bonds are paid for taking that side of an interest rate bet: the side that gains when expected interest rates go down and loses when expected interest rates go up. The resulting premium on long term bonds tend to be higher than expected returns on short term bonds, even when the risk in a long term bond can all be diversified away. There is a term structure of interest rate bets that corresponds to the term structure of yields on bonds with various maturities.

Investment

For an individual, an investment is an asset he holds primarily because of the dollar return it provides. A washing machine would not normally be considered an investment. A house and a car, however, might be considered investments even though they provide returns mainly in the form of services. Stocks, bonds, and savings deposits are clearly investments. For a firm, an investment is an asset it uses in its business, and any outly it makes hoping to increase its profits. Firms make investments in such things as real estate, advertising, equipment, research, and training for employees.

Investment company

An investment company issues securities and uses the money that comes in to buy the shares of other firms. Or it may buy bonds or lend some of the money. The shares of a closed end investment company trade in a secondary market: the market value of its liabilities may differ from the market value of its assets. The shares of an open end investment company or mutual fund are normally issued and redeemed by the company ata price that makes the market value of its liabilities equal to the market value of its assets.

Investment decision

An investment decision can be a choice among traded securities. More often, it means the decision by an individual or firm to create a new asset, in the hope that it will be worth more than it costs. A firm can make investment decisions by imitating what its competitors are doing, by observing the prices at which similar assets are sold and comparing those prices with the cost of producing it, by figuring what the asset will contribute to earnings and multiplying by a price-earnings ratio specific to the asset, or by projecting cash flows from the asset and discounting them to the present to get a value that can be compared with the cost of the asset. These complex methods seem less practical than the simple ones like imitating competitors.

Investment goods and services

Investment goods and services are those that are not used up in the current period. They include machines, inventories, skills, knowledge, consumer habits, real estate, weapons, and consumer durables such as cars. The flow output of the economy can be divided roughly between consumer goods and services and investment goods and services.

Leverage

A claim on an investment has leverage if the percentage changes in the value of the claim tend to be greater than the percentage changes in the value of the investment, and are highly correlated with the percentage changes in the value of the investment. An equity claim on an investment that is financed in part by debt will have leverage. An option will have leverage, where the investment is the underlying asset. These kinds of leverage are financial. We also speak of operating leverage, referring to a business with a high proportion of fixed costs. The profits of the business will be very sensitive to its sales.

LIFO

LIFO means last in, first out inventory accounting. When an item is sold from inventory, the cost assigned to that item is the cost of the similar item most recently bought for inventory. When the cost of similar items is rising, LIFO will normally give a higher cost, and thus lower income for accounting or tax purposes, than FIFO.

Limit order

A limit order is one that can be executed only at the specified price or better. A buy limit order at \$50 can be executed only at \$50 or below. A sell limit order at \$50 can be executed only at \$50 or above. A liquidity trader may gain by using a limit order, because a limit order signals to the market that he does not have significant perishable information. He will probably trade at a better price than if he used a market order, but he's not sure how long he'll have to wait to trade. A limit order will often be at the same price as one side of the specialist's quote, so the specialist is (in a sense) sharing his profits with the users of limit orders. It's possible, though, that the specialist's trades for his own account are more profitable than his trades on behalf of limit orders.

9
true -
but he
may wait
forever.

Liquidity

A liquid asset is one that can be sold or redeemed quickly and easily at a known price. Sometimes an asset is considered liquid only if it can also be bought and immediately sold for a low total trading cost. All government bonds are liquid in this sense, but short term government bonds are sometimes considered more liquid than long term government bonds, because the price of a short term bond fluctuates less than the price of a long term bond. Sometimes a less liquid asset will have a higher expected return than a more liquid asset, and this difference is called a liquidity premium or term premium. One of the most liquid assets is currency, which has a zero nominal return so long as it is accepted in payment. A market in which a liquid asset trades is a liquid market, though the asset may be liquid only because the market exists.

Price - 36 -
Volatility → High trading volume.

Liquidity trading

Liquidity trading is trading that would occur even if all investors had the same information and the same beliefs about investment opportunities. It is trading that would result from changes in these shared beliefs, and from changes in an investor's tastes. For example, it may result from changes in an investor's overall tolerance for risk, or from changes in his preferences for risks of changes in the prices of goods and services. These changes may in turn be associated with changes in the investor's wealth. Small cash flows may not result in liquidity trading, because they can just change the amount on which the investor is earning or paying the short term interest rate. Large cash flows, though, often mean a change in the investor's wealth and thus lead to liquidity trading. If a liquidity trader can arrange to trade only with other liquidity traders, he can reduce the price effects of his trades; but it is difficult to convince others that you are a liquidity trader. Information traders like to pretend to be liquidity traders. Liquidity traders use limit orders more than information traders, and market orders less. Offering to buy or sell a whole portfolio is one way to suggest that you aren't trading on information, and buying or selling over a long period of time is another. Yet another is offering to trade at future market prices. If information traders make money as a group, they make it at the expense of liquidity traders.

Loan

A loan is an asset for the lender, and a liability for the borrower. The terms of a loan include promised payments, restrictions on the borrower's use of his assets, and the lender's rights in case the borrower fails to live up to the other terms of the loan. The yield or annual percentage rate is only the promised return or maximum return on the loan. The expected return is lower because of possible default, and may be reduced further by the costs of administering the loan. The promised return depends on the total risk associated with the borrower and his assets while the expected return may depend mostly on the part of the risk that can't be diversified away.

Long position

When an investor has a long position in an asset, he gains when the price of the asset goes up, and loses when the price of the asset goes down, other things being equal. An investor can have a long position by owning the asset or by having a contract whose value depends in part on the price of the asset. Buying a call option on the asset or selling a put option on the asset will give him a long position. Buying the bonds of a firm close to bankruptcy will give him a long position in the firm. A person who takes a contract to buy in a forward or futures market also has a long position.

Making a market

A dealer makes a market in the securities he specializes in. He buys and sells the securities continuously. When an underwriter brings a new issue to the market for the first time, he will often make a market in the issue so that it will be traded continuously.

Manipulation

Manipulation of a stock means causing it to sell at a price that is not justified by the issuing firm's prospects. The price may be either too low or too high. Anyone with enough money can manipulate the price of a stock: he can buy and force the price up; and he can sell short (if not subject to the uptick rule) and force the price down. What's not clear is why he would want to do that. If he buys to force the price up, he will force the price down when he sells again, and his average selling price will normally be lower than his average buying price. He will expect to lose money, unless he combines this activity with issuing false information that the market believes. So instead of having rules against manipulation, perhaps we should rely on rules against issuing false information.

Market index

A market index is constructed by plotting the changes in price for a diversified portfolio of common stocks. An equally weighted market index is based on a portfolio that always has the same dollar investment in each of its stocks. A value weighted market index is based on a portfolio where each stock is weighted in proportion to the total outstanding dollar amount of that stock. Another kind of market index is based on a portfolio that always has just one share of each of its stocks. There are also indexes, sometimes called market indexes, where the change in the index is a geometric average of the changes in the individual stock prices. An index like this does not show the change in price of any actual portfolio.

Market information

Market information causes the prices of assets generally to change. It is usually information about the prospects for the economy, either near term or long term. Sometimes, though, it is information about government actions such as price controls that will affect the share of output going to owners of physical assets compared to the share going to owners of human capital.

Market maker

A market maker is a dealer. He buys and sells the assets he specializes in continuously. Normally there is more than one market for a security and then we refer to competing market makers. When an underwriter brings a firm's common stock to the market for the first time, he will often act as a market maker in the stock afterward to help ensure a continuous market.

Market order

A market order to buy or sell a security is one that is to be executed immediately at the best price available. A market order to buy is executed at the asked price, and a market order to sell is executed at the bid price. On an exchange floor, a market order is usually filled by the specialist, either for his own account or for a customer who has left a limit order with him. Earning the dealer spread on market orders is one of the specialist's main sources of income.

Market portfolio

If the world were simple, the market portfolio would be a portfolio of all assets taken together. In practice, we usually choose a portfolio containing traded securities of the largest domestic firms. We ignore privately held firms, real estate, human capital, and foreign assets.

Market value balance sheet

A market value balance sheet is a statement of a firm's (or individual's) assets and liabilities, where an attempt is made to use market values for both assets and liabilities. When the asset market values cannot be observed directly, and almost all liabilities are publicly traded, we can start by figuring the total market value of all the liabilities. We subtract from this the total market value of the assets whose market value are known, and the result is an estimate of the total market value of the assets whose market values are not known. The figures in the market value balance sheet change every day.

Maturity

The maturity of a bond is the time between now and the final payment to the bondholder, or the time between original issue and final payment. The maturity of an option is the length of the period during which the option can be exercised, or the time between now and the last time at which the option can be exercised.

Maturity date

The maturity date for an option is the date on which the option expires: the last date (or the only date) on which it can be exercised. The maturity date for a bond is date of the last required payment of interest or principal.

Money market fund

A money market fund is a mutual fund that buys short term interest-bearing securities. However, a money market fund normally does not allow its price per share to fluctuate with the value of the securities it holds. Reserves are used to absorb the normally small asset value fluctuations. As a result, the interest rates on these funds may differ somewhat from market rates, causing substantial flows of money into or out of the funds at times.

Money market funds grew up at a time when bank deposit interest rate ceilings were especially onerous. If rate ceilings were removed for both demand and time deposits, and if reserve requirements were applied evenly to all forms of lending, including lending through money market funds, these funds would probably cease to exist.

Mutual fund

A mutual fund redeems its shares continuously at net asset value per share. It usually sells its shares continuously at net asset value per share, too, which means that its price cannot deviate from net asset value. Occasionally there is a redemption fee paid into the fund, which helps prevent traders from taking advantage of quirks in the method for finding net asset value. Often there is a sales charge or load paid to the selling organization. Since the price of the fund shares are fixed by the fund at the value of its assets per share, fluctuations in demand for the shares result in flows of money into or out of the fund.

News

News is information: anything that causes asset prices to change. World news causes prices all over the world to change, usually in the same direction. National news causes prices of assets within a country to change. Local news causes the prices of local assets to change.

Non-voting stock

Occasionally a firm will issue two classes of common stock that are identical except that one class has voting rights and the other does not. The state in which the firm is incorporated may not allow this, however, because the voting stockholders may cause the firm to do things that help them and hurt the non-voting stockholders. For example, the voting shareholders may cause the firm to buy goods and services at inflated prices from other firms in which they have an interest. Non-voting stock is also created by a short sale. The lender of the stock receives the equivalent of non-voting stock, issued by the borrower who is selling the voting stock short.

Operating leverage

A business has high operating leverage if its fixed costs are a large part of its total costs. The fixed costs include such things as interest out of debt, the cost of owning or renting plant and equipment, and the salaries of permanent employees. The division of total costs makes sense only for the short run. In the long run, almost all costs are variable, because debt can be repaid, plant and equipment can be used up or sold, and employees can be fired or allowed to leave voluntarily.

Option

An option is the right to buy (or sell) an asset at a specified price for a specified period. An option to buy is a call option, while an option to sell is a put option. An American option can be exercised throughout the specified period, while a European option can be exercised only at the end of the period. An over-the-counter option is a contract between a buyer and a writer, while an exchange traded option puts a clearing corporation between the buyer and the writer. The corporate liability closest to a simple option is the warrant, but all corporate liabilities have some option features: sometimes the issuer has the option, and sometimes the holder of the security has the option. For example, the issuer of a straight bond sometimes has the right to buy it back at a specified price. The value of an option depends on such things as the terms of the option, the volatility of the price of the underlying asset, the current price of the underlying asset, the likely dividends or other distributions on the asset, and current interest rates.

Output

The output of the economy is the same as total income, so we have the same choices in defining output that we have in defining income. The past output of the economy can be defined as the change in the value of the existing capital stock plus the flow output of the economy. Expected future output can be defined as the expected change in the value of the existing capital stock plus flow output. The more usual definition of output focuses only on flow output, but this seems incomplete. The value of the existing capital stock is not easy to define or measure, but it seems plausible that changes in the value of the capital stock are highly correlated with changes in the level of stock prices generally.

Over-the-counter option

With an over-the-counter option, the writer has a contract directly with the buyer, and the terms of the option can be arranged to suit the two parties. In particular, there is no limit on the size or number of contracts the writer or buyer may have. Since the exercise price of an over-the-counter option is not standardized, it can be adjusted for cash dividends. With an exchange traded option, on the other hand, the writer has a contract with the options clearing corporation, and the clearing corporation has a contract with the buyer. The terms of the option are standardized so that either party can close out his position without affecting the other. If the buyer chooses to exercise his option, a given writer has only a small chance of being chosen to deliver the underlying asset.

Passive portfolio

A passive portfolio is a portfolio managed for broad diversification, low trading costs, and low taxes. Information trading is not done. Even cash inflows or outflows may not cause any portfolio turnover, because they will initially just increase or decrease the cash balance or loan balance. (The cash balance or loan balance is a positive or negative balance growing at the appropriate short term interest rate.) Trading will be done to change the overall risk of the portfolio, to handle large cash flows, to improve diversification, and for reasons like responding to attractive tender offers. Trades may involve many stocks at once, or may cover an extended period, to help reduce trading costs. When taxes are involved, a stock may be sold partly because the sale will create a realized capital loss. A passive portfolio may also involve consistent exposure to the risk of changes in interest rates, volatilities, or the prices of certain goods and services.

Performance

The performance of a portfolio is usually measured relative to the performance of a standard such as a market portfolio. The usual method is to construct a mixture of the market portfolio with borrowing or lending that has the same systematic risk as the portfolio we're looking at. The measure of performance is the average difference between the returns on these two portfolios. It is very rare for a portfolio to show up as consistently superior to the market by this test. But the test would show only relatively large differences in expected return. A portfolio may have an expected return that is consistently higher by 1% per year and it won't show up, by this or any other empirical test of performance. ?

Portfolio

A portfolio is usually a collection of securities. Sometimes other assets are included. A portfolio may contain short positions as well as long positions. The return on a portfolio is the sum of the returns on the assets in the portfolio, where each return is weighted by the amount of the asset in the portfolio. If the portfolio contains a short position in any asset, the weight on that asset will be negative. Large portfolios where every asset has a positive weight tend to have highly correlated returns, even when each portfolio contains assets from a different country.

Preferred stock

A preferred stock is like a bond with indefinite maturity, except that missing a dividend on preferred stock does not force a firm into bankruptcy, while missing a payment of interest or principal on a bond generally does. Also, preferred stock dividends are not deductible for tax purposes, while bond interest payments are deductible. Convertible preferred stock is like a convertible bond. Both straight preferreds and convertibles are normally callable, meaning that the issuer has the option of buying the issue back at specified prices. When a convertible preferred is called, the holder can accept the specified price, or he can exchange his preferred stock for common stock.

Premiums on bets

Suppose that the expected price of a certain commodity three months from now is \$3.00. Two people can bet on the future commodity price by agreeing that one will pay the other a certain multiple difference between the commodity price and \$3.00. If that's all they do, there is no premium on the bet. But if one must pay the other to induce him to make the agreement, or if the \$3.00 must be changed to a different figure to make the agreement possible, there is a premium on the bet. The dollar premium is the amount that one person will pay the other if the future commodity price is exactly \$3.00.

Present value

The present value of an asset is the same as its value. The phrase present value implies that the value is estimated by estimating the asset's future cash flows and discounting them to the present. If the cash flows are certain, then the discounting can be done using current riskless interest rates on bonds of different maturities.

Price

The price of an asset is the price at which it trades in an organized market, or the price someone is willing to pay or take at a particular time. The asset will be a good buy if its price is less than your estimate of its value, and a good sell if its price is more than your estimate of its value.

Price effect

The price effect of a trade is the effect that the trade has on the price of the security. A large buyer may force the price higher than the last trade price, while a large seller may force the price lower. Some price effects are permanent, because the buyer or seller is trading on information that becomes available and thus changes the value of the security. Other price effects are temporary, and represent part of the total cost of making a trade.

Price-earnings ratio

The price-earnings ratio for a firm is the ratio of the price or value of its common stock to its past or estimated future earnings. Accounting rules seem designed so that price-earnings ratios are as close to constant to possible (or perhaps as close as possible to the inverse of the short term interest rate). Price-earnings ratios should be relatively constant over time and across firms. The more similar two firms are, the closer their price-earnings ratios should be. A firm that expects higher earnings in the near future should have a higher price-earnings ratio than an otherwise similar firm that expects lower earnings in the near future.

Profit opportunities

Profit opportunities allow an investor to do better by buying and selling securities and other assets than he could do by holding a fixed portfolio. At least they allow him to expect to do better. In an uncertain world, a strategy that has a higher expected return and lower risk than a second strategy may still give worse results in the end than the second strategy. Before the fact, the first strategy was better. It involved profit opportunities. After the fact, though, the first strategy was worse. The only sure profit opportunity is one that allows a consistent return higher than the short term interest rate.

Project

A project is a proposed investment. One way to evaluate a project is to see whether similar firms have made the same investment and are happy with the results. If similar ongoing projects are sometimes sold, see what they sell for. Or estimate the contribution that the project will make to earnings in a typical year, and multiply by a price-earnings ratio. The price-earnings ratio should depend on the project, though, and not on the firm making the proposed investment.

Promised return

The promised return on a security is the amount the contract requires the issuer to pay if it can, expressed as a percentage of the initial price of the security. A common stock has no promised return. A preferred stock doesn't have a promised return unless the issuer is in liquidation, because only the dividend is promised. Promised return is clearest with a short term bond, where the issuer promises to pay both interest and principal in the near future. These promises, however, are not always kept. Promised return and expected return are not the same. The riskier the issuer is, the more likely it is that the promised payments will not be made, and the higher the promised return must be to induce investors to hold the security.

Put option

A put option is an option to sell the underlying asset for the exercise price, while a call option is an option to buy the underlying asset by paying the exercise price. A put option goes up when the underlying asset goes down. Buying a put option is a substitute for selling the underlying asset short. An American put option should sometimes be exercised early after the stock price has fallen well below the exercise price.

Random walk hypothesis

The random walk hypothesis says that it's not possible to predict future returns on a risky asset. The weak form of the random walk hypothesis says that it's impossible to predict future returns from past returns. The strong form of the random walk hypothesis says that it's impossible to predict future returns using any data at all, including data about the company and data about the economy. In an efficient market both forms of the random walk hypothesis may be roughly true, but neither form can be strictly true. The interest portion of the return on an asset is predictable, so almost all the return on a very low risk asset will be predictable. Assets such as options have changes in risk that are accompanied by price changes, so these changes in risk and the changes in expected return that go with them can easily be identified. More generally, changes in the risk of assets generally can be observed and predicted, even in an efficient market, and these changes in risk go along with changes in the expected return on assets generally.

Real interest rate

The real interest rate is the interest rate minus the expected inflation rate. Since the expected inflation rate depends on the price index being used, so does the real interest rate. For a given price index, the real interest rate is not observable, because the expected inflation rate is not observable. It is dangerous to rely too heavily on past actual inflation in forming impressions about expected future inflation.

The real interest rate is affected by both tastes and technology: by preferences for spending now or spending later; by the degree of aversion to risk that people have; and by the expected productivity of capital at different levels of risk. Changes in any of these factors and in other factors will cause changes in the real interest rate, so we cannot assume that the real interest rate is constant. Still, the past behavior of interest rates and inflation suggests that a constant before-tax real interest rate is a good first approximation.

Recapitalization

When a firm recapitalizes, it issues new securities in exchange for some or all of its old securities. For example, a firm that cannot repay a debt issue might issue new common stock and give all of it to the old debtholders, leaving the old stockholders with nothing. It is usually possible to set the terms of the recapitalization so that the holders of each of the firm's liabilities ends up with new securities worth about what the claims he gave up were worth just before the recapitalization.

Restricted borrowing

The government can restrict borrowing by putting limits on how much individuals can borrow, as with margin requirements, or by forcing lenders to put on such limits. It can restrict borrowing by outlawing the use of certain kinds of collateral, like assets in a pension plan, to secure a loan. It can restrict both borrowing and lending with tax policy that makes the after-tax borrowing rate significantly higher than the after-tax lending rate even when default risk is minimal.

Borrowing restrictions affect the amounts that people spend and save; the degree to which more risk averse people transfer risk to less risk averse people; and the interest rate. These restrictions also affect the kinds of investments that firms make.

Restricted lending

The government can restrict lending by putting limits on how much individuals can lend or by making certain kinds of lending unattractive, as with interest rate ceilings on deposits at financial institutions. It can restrict both borrowing and lending with tax policy.

Lending restrictions and borrowing restrictions affect the same things, including the total amount of credit in the economy. Generally, both will reduce the gross volume of credit, but lending restrictions will increase the interest rate, while borrowing restrictions will reduce the interest rate.

Return

The return on an asset is the change in its price or value over a specified period plus any distributions paid to holders of the asset during the period. The distributions on a stock are called dividends, while the distributions on a bond are called interest payments. The return on an asset is generally expressed as a fraction or percentage of its price at the start of the period; it is not converted to an annual rate, because the returns in two successive periods are usually almost independent. When the return is not expressed as a fraction or percentage, it is called the dollar return.

Rights

A right is an option to buy a security such as common stock. Rights are generally issued by a firm as part of a plan to issue new stock. If the exercise price is set low enough, the firm can be sure that almost all the rights will be exercised and the new stock will be sold. The full price of the new stock is the exercise price of the rights plus the price of the rights just before they expire, so a low exercise price does not imply a bargain sale of stock. When rights are distributed to stockholders, the value of the stock falls by about the value of the rights being distributed, so rights don't represent a special bonus for stockholders, either. The biggest part of the cost of issuing stock through a distribution of rights is the decline in the stock price needed to expand the market for the stock. If an underwriter is involved, it's a smaller decline in the stock price plus the underwriter's fee. The total cost may be lower if an underwriter is involved, but it's hard to tell because it's very hard to estimate the decline in the stock price caused by the new issue of stock, either before the fact or after the fact.

Risk

An asset is risky because its future return is uncertain. Uncertainty that is independent of the uncertainty about asset returns generally is called specific risk, or risk that can be diversified away. The uncertainty that assets have in common is called systematic risk, or risk that can't be diversified away. One measure of systematic risk is the asset's beta. One measure of total risk, the sum of systematic and specific risk, is the asset's volatility. Any measure of risk will also be a measure of the likely losses if the price of the asset goes down.

Risk premium

The risk premium on an asset is the difference between the expected return on the asset and interest on the price of the asset at the riskless rate. It is also called the expected excess return. The risk premium is what's being offered to investors who bear the risk of an asset. It depends on that part of the asset's risk that cannot be diversified away. In the capital asset pricing model, beta measures the risk that can't be diversified away, and the risk premium is proportional to beta. Bets on things like future commodity prices and future interest rates may have risk premiums too. The risk premium on a futures contract may have to be expressed in dollar terms rather than in percentage terms, because the initial value of such a contract may be zero.

Round lot

A round lot is a standard unit of trading. For most common stocks, a round lot is 100 shares. Any smaller amount of stock is an odd lot. In exchange trading, odd lot orders are handled automatically at the price of the next round lot trade. The price may be adjusted by a form of commission called the odd lot differential.

Security

A security is a corporate or government liability that can be transferred from one investor to another. It includes common and preferred stock, straight and convertible bonds, and warrants. Normally it does not include bank loans or obligations created by such contracts as long term leases of plant or equipment.

Short position

A short position is the other side of a long position. When a long position moves, a short position moves in the opposite direction. An investor with a short position in an asset gains when the asset goes down, and loses when the asset goes up. Selling the asset short gives a short position, but maintaining this position may involve loss of interest on the collateral given to the buyer or the lender of the asset. Thus it may be better to take a short position in an asset by writing a call option or buying a put option. Exchange traded options can't be used to create large short positions, though, because of position limits imposed by the exchanges and the government. A person who takes a contract to sell in a forward or futures market also has a short position. The cost of maintaining a short position can be defined as the losses that would be incurred if a short position and a long position were held at the same time. In principle, losses on a short position are unlimited, while losses on a long position are limited. In practice, though, an investor can limit his losses on a short position by closing out the position, in part or in full, as his losses become large.

Short sale

When an investor owns an asset, he can sell it short by agreeing with the buyer on a price but deferring delivery of the asset until a later time. When he does not own the asset, he can sell a contract to deliver the asset, and can later either buy the contract back or buy the asset and end the contract by delivering the asset. Or he may borrow the asset, sell it, and close out his position later by returning the asset to the lender. When an investor sells short a stock he does not own, and buys the stock that he must deliver later at a lower price, he comes out ahead. An investor with a short position in an asset gains when the asset goes down in price, and loses when the asset goes up. In U.S. markets, selling an option short is called writing a naked option, and no borrowing is involved. But selling a stock short means the seller must get a stock loan from a third party, and often must put up cash collateral for the loan on which he receives less than the market interest rate. A person with a short position in a security normally matches any dividends or other distributions that the issuer of the security pays. If a person has a long position and a short position in the same asset simultaneously, and does not lose interest on any of his collateral, his gains on one position will just offset his losses on the other. Selling short is a natural response to unfavorable information on an asset the investor doesn't own. Selling short is no more a sign of manipulation than buying. But the non-voting shares created when a stock is sold short may set up the potential for manipulation. It's not possible to figure a meaningful percentage return on a short position, since the investment in the position is negative (ignoring collateral and margin requirements).

Simple option

A simple option is an over-the-counter option or an exchange traded option. It can be either a call option or a put option; either an American option or a European option. A simple option generally has a maturity less than a year. A warrant is not a simple option; a firm that issues warrants will issue and deliver its own stock if the warrants are exercised.

Specialist

A specialist is designated by an exchange to make a continuous market in one or more securities. He normally operates as part of a firm that handles a number of securities. He stands ready to buy or sell at least one round lot of his security at any time during trading hours, unless trading has been suspended. He also handles limit orders that have been left with him: when the price reaches or crosses the limit, the limit order is executed. He does other things too, such as helping to bring together large buyers and sellers of a security. He charges a commission for handling a limit order and he tries to make money through the bid-asked spread when buying and selling for his own account. He also tries to put continuity, depth, and liquidity into the market for his securities.

Specific information

Specific information affects the value of a single firm, but has a negligible impact on the values of other firms. There isn't much of it around, since what affects one firm is likely to affect its competitors, either positively or negatively. Most information affects an even larger group of firms.

Stock dividend

A stock dividend is an added number of shares sent to every stockholder of a firm. The stock price falls when a stock dividend is paid, so stockholders do not benefit directly. A stock dividend is something like exchanging 20 nickels for 10 dimes. A large stock dividend is called a stock split. A small stock dividend may have an indirect effect on the stock price because it may imply a change in the terms of outstanding warrants, convertible bonds, or risky straight debt.

Stock loan

A stock loan is just what it says. The lender gives the stock to the borrower, and the borrower agrees to return identical stock to repay the loan. The lender maintains his financial interest in the stock, but he should lose his voting rights. (If the lender is a broker using customer stock, the customer may be allowed to continue to vote.) A lender normally requires that the borrower pay the lender any dividends on the stock, and maintain cash collateral at least equal to the value of the stock at all times. The lender may pay the borrower some interest on his cash collateral, but the reason he is willing to lend the stock is that market interest rates exceed the rate he pays on the borrower's collateral. There is a significant risk of default on this kind of stock loan, because the collateral may be insufficient if there is a sharp rise in the stock price. The lender could protect himself, though, by insisting that the borrower maintain collateral worth substantially more than the stock he borrowed. But this may involve risk to the borrower that the lender will have financial problems and won't return all of the collateral. Sometimes a lender requires no collateral at all, as when he lends his stock to a brokerage firm that uses it to satisfy capital requirements. He must then be compensated in some other way for bearing the risk that the collateral will not be returned.

Stop order

A stop order is one that is not to be executed until the security trades at or beyond the limit price. When that happens, the stop order becomes a market order, so that it may be executed at a price worse than the limit. For example, a stop order to buy a stock at \$50 will be executed after the stock trades at \$50 or below. The stock might trade at \$50, and the execution of the stop order might give a trade at \$50.50.

Straight debt

A straight debt issue is one that is not convertible into any other securities at the option of the lender. The borrower will often have the option of redeeming the debt at prices at or above the face value of the debt.

Systematic risk

An asset's systematic risk is that part of its total risk that cannot be diversified away. The systematic risk of a portfolio can be obtained by summing the systematic risk of each asset in the portfolio, weighting each asset's systematic risk by the amount of the asset in the portfolio. It is systematic risk that influences the expected return on an asset. In the capital asset pricing model, an asset's beta is a measure of its systematic risk. In a more general model, systematic risk would include the uncertainty in future commodity prices, future interest rates, and the future volatility of various assets.

Time diversification

?

An individual diversifies over time by changing the amount of market risk he is bearing smoothly over time, and by changing it in response to changes in his wealth and age and taste for risk. If an individual shifts in and out of the market because he mistakenly thinks he can forecast market movements, he will have poor time diversification. He will be bearing too much total risk for the expected return offered by his portfolio. An individual who bears a lot of risk in one period of his life but very little in other periods is in the same kind of trouble as an individual who has a lot of his money in one asset. Time diversification may help reduce risk even more than asset diversification, because portfolio returns in successive periods are roughly independent.

Trade

A trade happens when one investor buys an asset from another. One or both investors may be dealers. If one is a dealer, then the trade price may reflect the dealer spread. Sometimes a dealer buys from one investor and immediately resells, usually at a higher price, to another investor. In this case the dealer spread is the difference between the two prices. Also, such a pair of trades might be considered just a single trade if the trade is to be reported publicly.

Trading profits

Trading profits are profits that depend on the use of information that the market doesn't have. They are profits (or losses) from information trading. Interest earned on a savings account or short term note would not be part of trading profits. Neither would the returns to an investor holding a passive portfolio. Thus trading profits are profits over and above both interest and the amounts that investors must be paid for bearing the risks in the market, including the risk of changes in interest rates, volatilities, or commodity prices. Trading profits for investors as a group must be zero, so some investors can have positive trading profits only if others have negative trading profits. If investors realize this, and if all investors are concerned only about increasing expected return and reducing risk, then some investors can have positive expected trading profits only if other investors have negative trading profits. If no investor could tolerate negative expected trading profits, there would be no information trading, and no force to keep markets efficient. For markets to be efficient, at least some investors must be willing to trade even if their trading reduces expected return or increases risk or both.

Turnover

The turnover in a portfolio is the dollar amount of trading in a year as a fraction of the value of the portfolio. The amount of trading may be, for different purposes, one of the following: purchases, sales, the average of purchases and sales, the maximum of purchases and sales, and the minimum of purchases and sales. The value of the portfolio may be the initial value, the final value, or an average value for the year. The costs of high turnover include commissions, the price effects of purchases and sales, and taxes that result from realizing capital gains. Markets seem efficient enough that in most cases, these costs are not offset by expected gains from trading. For some investors, with special access to information that has not been discounted, the expected gains from trading may offset the turnover costs.

Uncertain return

All returns are uncertain, because all assets are risky. Thus an uncertain return is the return on any real or financial asset. Even governments that seem very stable sometimes default on their promises to pay, especially when those promises are made to specific individuals rather than to the bearer of a financial asset. Individuals and firms are normally even more likely to default on their promises to pay. And many assets, such as common stock, don't involve any promises to pay. The returns on these assets are uncertain even if all contracts are fulfilled. The return on an asset is uncertain because it depends on information that is not yet known.

Underlying asset

The underlying asset for a call option is the asset that the holder of the option has a right to buy by paying the exercise price. The underlying asset for a put option is the asset that the holder of the option has the right to sell at the exercise price. With a warrant, the underlying asset is created only when the warrant is exercised. With a commodity option, there is normally no underlying asset as such: when the option is exercised, a futures contract is created between the buyer and the writer, and the writer must put up cash at least equal to the difference between the exercise price and the futures price at the time of exercise.

Underwriting

Underwriters expand the market for a security through their selling efforts. They may essentially create the market for a security that has only been held by the officers of the issuing firm. The firm may help the process by setting a relatively low price on its securities, but some underwriting effort is usually necessary. Even if a firm gives rights to existing shareholders, many of the rights will be sold to brokers who then act like underwriters selling the shares created by exercising the rights.

Uptick rule

The uptick rule says that a short sale of stock can be made only at a higher price than the last different trade price. It was designed to keep a person from driving the price of a stock down by repeatedly selling large amounts of stock short. It seems unnecessary, because a person who drives the price down by selling short will drive the price back up when he buys. He will expect to lose money by the time he has closed out his short position, unless he combines this activity with releasing false information that the market takes to be true. So it seems more appropriate to focus regulation on ensuring the release of true information. If the rule really reduces the amount of short selling, then it may reduce individual losses from speculation, but it also creates economic losses because prices don't more fully reflect negative information about a firm or the economy. On stocks that have exchange traded options, the uptick rule may be ineffective, because an investor can take a short position by writing call options or buying put options.

Value

The value of an asset is the same as its present value. It is an estimate of the price at which you would be indifferent to buying it or selling it. One way to estimate value is to assume that it will be broken into pieces, and to add up the prices for the pieces that will be sold. A second way to estimate value is to look at the prices of assets that seem very similar and that have traded recently. A third way is to find out whether sophisticated people are buying or selling at current prices. A fourth way is to estimate the asset's future cash flows and discount them to the present.

Value weighted market index

A value weighted market index is based on a portfolio where every stock has a dollar investment proportional to the total dollar value of that stock's outstanding shares. The percentage change in the index is the weighted average of the percentage change in each of the component stocks, where the weight on a stock is the ratio of the dollars in that stock to the dollars in the whole portfolio.

Volatility

The volatility of an asset measures the extent to which its price fluctuates over time. The figure usually used for volatility is the standard deviation of the asset's return over a specified interval. The standard deviation can be divided by the square root of the length of the specified interval (in years) to convert it to an annual standard deviation. As a first approximation, a single volatility figure measures the day-to-day, week-to-week, month-to-month, or year-to-year variability in the price of the asset. The volatility of an asset changes over time, and may change with such factors as the price of the asset or the average volatility over all assets.

Volatility bet

Volatility bets are positions that show profits or losses if there are changes in expected volatility, for individual assets or for the economy as a whole. Buying or selling options normally means making such bets, because option prices go up when volatility estimates go up, and down when volatility estimates go down. A person may care about a change in the overall risk of the economy because it affects his welfare directly, and because it may be associated with a change in the expected return on assets generally. The person who takes one side of the bet will gain if expected volatility goes up, and lose if expected volatility goes down. The person who takes the other side will gain if expected volatility goes down, and lose if expected volatility goes up. If both break even when there is no change in expected volatility, it is a neutral bet. Otherwise, there is a premium on such bets, and one person is paying the other for taking the unfavorable side of the bet. There can be a whole term structure of such bets, because there can be a different bet for the expected volatility at each future time.

Voting stock

The owners of a corporation's voting stock are entitled to elect the directors (and to vote on certain other matters). In theory, electing the directors means controlling the corporation, but if no one owns a large percentage of the voting stock, the officers may control the corporation. Most firms issue only voting stock, partly because of state laws restricting the issue of non-voting stock. But non-voting stock is created, at least in principle, whenever an investor sells voting stock short. The person who lends stock for a short sale should lose his voting rights, though he will continue to have gains and losses when the stock goes up and down. In practice, a person whose broker lends the stocks in his margin account will almost always be allowed to vote.

Warrant

A warrant is an option issued by a corporation. When a warrant is exercised, the underlying shares are created by the corporation for delivery to the warrant holder in exchange for the exercise price. The typical warrant has a maturity of five years or more at the time it is issued, while the typical over-the-counter option or exchange-traded option has a maturity of less than a year when it is issued. Some warrants are perpetual. Warrants are frequently issued along with straight bonds. When a warrant expires without being exercised, the price initially received for the warrant may be counted as taxable income for the issuer. Warrant holders may bear a substantial amount of the risk of a corporation, but they have no votes. For these and other reasons, corporations do not often issue warrants to raise money.

Writing an option

Writing an option means selling the option short. The writer puts up collateral as a guarantee that he can buy the option back, and then sells the option in the open market. If he puts up collateral in cash, he may lose the interest that he might otherwise have earned on the cash, but if he puts up collateral in securities, he has no such losses. Writing an option is inherently less costly than selling stock short, because the option need not be borrowed before it is sold. An option writer does, however, have the risk that the holder of the option will exercise it, which would force him to deliver the underlying security. An option writer must also be prepared to close out his position before the option expires. Often, however, option writing gives a position that behaves like a short position in the underlying stock.