I

1. Idiosyncratic Risk

An unsystematic risk. This risk can be diversified from a portfolio; hence it is also a diversifiable risk. [See also **Unsystematic risk**]

2. Illiquidity

Illiquidity is the opposite of liquidity; either an asset cannot be converted into cash (e.g., a leased machine cannot be sold to raise cash) or an asset cannot be sold at a reasonable price (e.g., a firm bought a machine for $1 million, but the best offer from another buyer is $100,000). In the latter case, if the firm keeps the asset and uses it, it is worth ten times more than the amount of cash it could raise in a sale in the market.

In the short run, many firms may be illiquid, that is, they may lack cash. They remedy this situation by short-term borrowing. A firm borrows cash to meet its current obligations, knowing that its cash flow will improve in the future. This kind of illiquidity is transitory and is not associated with insolvency or bankruptcy. On the other hand, if a firm faces illiquidity with no expectation of future cash flow improvement, illiquidity may lead to insolvency and bankruptcy.

3. Immunization

A strategy that matches durations of assets and liabilities so as to make net worth unaffected by interest rate movements. If interest rates rise, the present value of assets and liabilities will fall by the same amount. Similarly, if interest rates fall, then the value of the assets and liabilities will rise by the same amount.

4. Immunize

To fully hedge against interest rate risk. Alternatively, it refers that immunization occurs when a financial institution's equity holders are fully protected against interest rate risk.

5. Immunized

It describes a financial institution that is fully hedged or projected against adverse movements in interest rates (or other asset prices).

6. Impairment of Capital Rule

A legal constraint known as the impairment of capital rule is designed to protect the firm's creditors. It stipulates that dividends cannot exceed the amount of retained earnings listed on the balance sheet. This ensures that the firm retains enough capital to pay its legal obligations.

7. Implicit Agency Costs

[See also **Agency costs**]

8. Implicit Contract

It is a long term customer relationship between a borrower and lender based upon reputation. This kind of implicit contract is generally regarding borrowing and repayment that extends beyond the formal explicit legal contract.

9. Implicit Finite Difference Method

A method for valuing a derivative by solving the underlying differential equation. The value of the derivative at time $t + \delta t$ is related to three values at time t. For pricing a stock option, these three values are M = number of stock price; N = number of time maturity; and ΔS = stock of price intervals. For example, values 10, 5 and 3 are

chosen for M, N, and ΔS. Thus the option price is evaluated at $3 stock price intervals between $0 and $30 and at half-month time intervals through the life of the option.

10. Implied Distribution

A distribution for a future asset price implied from option prices.

11. Implied Forward Rate

The forward interest rate between t_1 and time t_2 ($t_1 < t_2$) that makes an investor indifferent between, on the one hand, buying a bond maturing at t_2, and, on the other hand, buying a bond maturing at t_1 and reinvesting the proceeds at this forward interest rate.

12. Implied Repo Rate

The repo rate implied from the price of a Treasury bill and a Treasury bill futures price.

13. Implied Tree

A tree describing the movements of an asset price that is constructed to be consistent with observed option prices.

14. Implied Variance (Implied Volatility)

That state of the art method in the market today for estimating the volatility is the implied-variance estimate. Implied variance can generally be regarded as the market's opinion about the future variance of the stock. Originally proposed by Latane and Rendleman (1976), the idea behind the estimation of the implied variance is to equate the Black-Scholes model price to the current market price and solve iteratively for the remaining unknown variance. No closed-form solution is available to compute the implied variance, so a numerical search pro-

cedure such as the Newton-Raphson search or linear least-squares regression must be used. Issues abound concerning the use of implied variance; the first of them is the weighting issue. If the implied variance inherent in the market price for each outstanding option on a stock (underlying asset) were calculated, there would be as many estimates of the stock's implied variance as there are options. Disregarding the possibility of market mispricings for the moment, a number of other factors may also be able to help explain the observed discrepancies.

1. Exercise price (amount in or out of the money) differences
2. Time-to-maturity differences
3. Trading-volume differences among the individual options
4. Market conditions

15. Implied Volatility

The volatility for which the theoretical option price (typically computed using the Black-Scholes formula) equals the observed market price of the option. In other words, the expected volatility in return on an underlying asset or contract derived from an option pricing model.

16. In The Money

The owner of a put or call is not obligated to carry out the specified transaction but has the *option* of doing so. If the transaction is carried out, it is said to have been *exercised*. For example, if you hold a call option on a stock that is currently trading at a price higher than the exercise price, you may want to exercise the option to purchase stock at the exercise price and then immediately resell the stock at a profit. This call option is said to *be in the money*.

17. Inception Profit

Profit created by selling a derivative for more than its theoretical value.

18. Income Beneficiary

One who receives income from a trust.

19. Income Bond

A bond on which the payment of income is contingent on sufficient earnings. Income bonds are commonly used during the reorganization of a failed or failing business.

20. Income Fund

It provides liberal current income from investments. Income fund holds both equity and fixed-income security in a relatively stable proportion.

21. Income Statement

The income statement is an accounting report that summarizes the flow of a firm's revenues and expenses for a specific period. Unlike the balance sheet, it represents flow instead of static information. The income statement affects the balance sheet when the period's net income (or loss) less any dividends, is added to (or subtracted from) retained earnings on the balance sheet. The income statement reports important information about the results of operations and gives reasons for the company's profits or losses.

The income statement may be produced annually, quarterly, or monthly. Company management uses monthly statements primarily for internal purposes, such as estimating sales and profit targets, controlling expenses, and monitoring the progress of long-term targets. Quarterly and annual income statements are especially useful to the firm's shareholders, creditors, and competitors. The top entry of the income statement gives net sales revenue. From this total, subsequent entries subtract expenses, such as the cost of goods sold, selling and administrative expenses, research expense, interest expense, and income tax expense. This gives the famous bottom line: net income.

Alternative accounting methods can also affect the size of reported net income. The methods for calculating depreciation, inventory value, and pension fund liabilities all influence the amount of reported profits. For example, historical cost accounting may understate the cost of goods sold; in an inflationary environment, this can result in an overstatement of sales, taxes, and net income.

Firms generally practice accrual accounting, recognizing revenues and matching corresponding expenses at the time of sale. Unless the firm sells its products only for cash, recognizing revenue does not mean that a cash inflow has occurred; cash will not flow into the firm until some time in the future, when the customer makes a payment on an account. Similarly, matching expenses to revenue distorts the perception of cash outflows. Firms must pay for many matched expenses, including raw materials production costs, and labor expenses, before they sell the corresponding goods. In addition, some income statement expense items do not reflect cash outflows, for example depreciation expense.

Thus, positive net income does not necessarily mean that cash inflows exceed cash outflows; neither does a negative net income figure imply imminent bankruptcy. The analyst needs a better tool than an income statement to determine the cash flows of a firm, which is the purpose of the statement of cash flows. ʃee also **Statement of cash flows**]

In sum, income statement is a financial report that summarizes a firm's performance over a specified time period.

22. Income-and-Growth Funds

It is one kind of mutual fund. Income-and-growth funds are composed of a combination of common stock and bonds. Whether the emphasis is on income or growth determines what percentage of bonds or common stock is in the portfolio.

23. Incremental After-Tax Operating Cash Flows

For a cost-saving project, it is usually easier to estimate operating cash flows (OCF) by the tax shield approach as:

$$OCF = (S - C)(1 - T) + T(Dep)$$
$$- \text{Change in } NWC,$$

where S = sales revenue, C = cost, T = tax rate, Dep = depreciation, NWC = net working capital.

The incremental sales revenue is expected to be zero for most cost-savings projects, including this one. Operating cash flows depend upon the estimated cost savings, the depreciation, the tax rate, and changes in net working capital.

24. Incremental Cash Flows

The stand-alone principle requires the analyst to examine the incremental cash flows that occur as a result of the project. The cash flows are incremental in that they represent the differences between the firm's after-tax cash flows *with* the project and its **base case**, or the after-tax cash flows *without* the project. [See also **Base case**]

Estimating incremental after-tax cash flows for a project requires a more thorough analysis than just determining the expected change in cash flows from the firm's current condition.

In sum, incremental cash flows are differences between the firm's cash flows with and without a project.

25. Indentures

All bonds will have indentures, which are contracts or agreements between issuing corporations and their bondholders. Such an agreement is supervised by a trustee who acts on the behalf of bondholders to ensure proper execution of the indenture provisions by the corporation. If the issuer violates indenture provisions, it is in default, and the trustee must act to protect the bondholders' interests.

26. Independent Bank

A bank operating in one locality that is not part of a large multibank holding company or group of banks.

27. Independent Projects

Projects are independent projects when acceptance or rejection of any one alternative would have no bearing on the acceptance or rejection of any other. The firm could undertake any or all of a group of independent projects, as long as each accepted project was expected to increase shareholder wealth.

28. Index Amortizing Swap

[See **Indexed principal swap**]

29. Index Arbitrage

An investment strategy that exploits divergences between actual future prices and their theoretically correct parity values to make a profit. [See also **Program trading**]

30. Index Fund

A mutual fund holding shares in proportion to their representation in a market index such as the S&P 500.

31. Index Futures

A futures contract on a stock index or other index.

32. Index Model

A model of stock returns using a market index such as the S&P 500 to represent common or systematic risk factors.

33. Index of Leading Indicators

[See **Business cycle**]

34. Index Option

A call or put option based on a stock market index.

35. Index Rate

The rate that serves as a base rate when pricing certain mortgages and variable rate loans.

36. Indexed Principal Swap

A swap where the principal declines over time. The reduction in the principal on a payment date depends on the level of interest rates. (The lower the interest rate, the greater the reduction in the principal).

37. Indifference Curve

A curve connecting all portfolios with the same utility according to their means and standard deviations.

38. Indirect Loan

Loan in which a retailer takes the credit application and negotiates terms with the actual borrower. The lender then purchases the loan from the retailer under prearranged terms.

39. Indirect Quotes

Exchange rate quotations can easily cause confusion. The market convention is to use indirect quotes; that is, a statement of units of foreign currency per US dollar (for example, DM 1.4736/dollar). Thus, when economists expect the US dollar ($) to strengthen against the yen (¥), they expect the indirect quote (¥/$) of the exchange rate to rise, so the US dollar will purchase more Japanese yen. A weakening US dollar means the dollar will purchase less yen, so the indirect quote will fall.

40. Individual Retirement Account

A retirement account available to individuals to defer income taxes.

41. Industrial Revenue Bond (IRB)

A bond issued by a state government, local government, or political subdivision for the express benefit of a business that will effectively use the proceeds.

42. Inefficient Market

[See **Efficient market**]

43. Inflation

When the economy begins to expand too quickly, demand from consumer and business spending may outstrip supply, driving prices upward; this is inflation. Although many argue that the Fed can best control inflation by slowing the growth of the money supply, others argue for lower levels of government spending and/or higher taxes to reduce aggregate spending in an overheated economy. In the case of economic recessions, some economists favor fiscal policies in the form of higher government spending or lower taxes in order to stimulate demand forces.

Differences in inflation rates between countries will lead to changes in the spot exchange rate over time. Countries with higher inflation rates will face depreciation, or increasing weakness, in their currencies over time.

44. Inflation Differential Risk

Inflation differential risk is the second added dimension of international diversification. Suppose an investor in the US has a security in England whose return is fixed in terms of the pound. Assuming that there is no inflation in the US but that the inflation rate in England is uncertain. The dollar value of the investment at the end of the period is uncertain and hence risky.

45. Inflation-Escalator Clause

A clause in a contract providing for increases or decreases in inflation based on fluctuations in the cost of living, production costs, and so forth.

46. Information Asymmetry

A type of transaction costs relates to the cost of information. Management's inside information is not freely disseminated. If management were to share its secrets and competitive plans with *The Wall Street Journal* or disclose them in mailings to shareholders, that information would quickly arrive in the offices of the firm's competitors.

Because of this information gap or information asymmetry between management and the public financial markets, the firm may need to raise money to take advantage of a competitive opportunity at a time when management feels that the firm's stock is underpriced. If raising equity is not an attractive option because of a low stock price and the firm's debt ratios already are high or are nearing the limits set by covenants in prior bond issues, the firm may miss the investment opportunity. Therefore, firms may avoid issuing excessive amounts of debt in order to maintain financing flexibility in the form of some degree of excess or unused debt capacity. In this way, the firm can maintain its ability to finance good capital budgeting projects by borrowing. This gives the firm another reason not to over-leverage itself; in fact, the firm may try to keep its debt ratio slightly below the optimal ratio in order to ensure that funds will be available if they are needed.

47. Information-Content Effect

Payment of a dividend conveys a signal to the market place. In other words, each divided payment or change in the dividend carries information to investors about the company. In sum, the rise or fall of stock price following the dividend signals is called information-content effect.

48. In-House Processing Float

Refers to the time it takes the receiver of a check to process the payment and deposit it in a bank for collection.

49. Initial Margin

The cash required from a futures trader at the time of the trade.

50. Initial Outlay

The first cash flow estimate is the initial investment in the project. For projects that require designing or modifying equipment and buildings, engineering estimates may be available. Engineers can examine preliminary designs or architectural sketches and estimate the quantities of various materials needed. Estimates of purchases, transportation costs, and construction expenses can be developed based on current market prices.

Another means of estimating the acquisition or construction cost of a project is to solicit bids from various construction or equipment manufacturers based upon a preliminary set of design specifications. An approximate cost can be determined through discussions with bidding firms. If the firm is large enough that it has an in-house engineering or real estate acquisition staff, this expertise also can be tapped to estimate relevant costs.

The expense of developing cost estimates is a sunk cost. That money is spent and gone whether or not the proposed project is accepted; it should not be included in the project's cash flow estimates. However, the initial outlay estimate must consider opportunity costs if the project will use property or equipment presently owned by the firm.

The investment cost estimate may have to be adjusted if the project involves replacing one asset with another, presumably newer and more cost-efficient model. If the old asset is going to be sold, the investment outlay must be reduced by the after-tax proceeds from the sale of the old asset.

Finally, even though a project's initial outlay may directly involve property and equipment (investing cash flows), it also may have implications for net working capital (operating cash flows). For example, if a project affects the firm's production process, inventory levels may change.

New raw materials needs may affect accounts payable. These kinds of expected changes in net working capital must be included as part of the initial outlay.

51. Initial Public Offering

Raising capital privately may fail to raise the necessary funds or the cost of raising funds privately may be too high. When this happens, the firm may choose to go public in an initial public offering (IPO). That is, the firm may sell shares of stock to the general public and allow the shares to trade freely between investors. Many entrepreneurs dream fondly of their firms someday becoming public corporations in this way. See also **Going public**] IPO is also called an unseasoned new issue.

52. Input List

List of parameters such as expected returns, variances, and covariances necessary to determine the optimal risky portfolio.

53. Inside Information

Nonpublic knowledge about a corporation possessed by corporate officers, major owners, or other individuals, with privileged access to information about a firm.

54. Insider Trading

Some managers may try to use their privileged access to private information about the firm for their own personal gain. By buying shares of stock before good news is announced and selling it prior to the release of bad news, insider trading allows them to profit inordinately as compared to the market as a whole. Such actions are illegal in the US, but it is sometimes difficult to prove that an executive's stock purchases or sales were caused by his or her access to private information.

55. Insolvency

Insolvency means that the firm does not have sufficient cash inflows to meet all of its cash outflows.

Although all businesses expect to succeed, many do not. Various financial indications of serious difficulty often are apparent. Cash shortages may cause illiquidity, borrowing may increase, accounts may be overdrawn, and maintenance of plant and equipment may be delayed. Careful observation of either profit or cash receipt and disbursement trends may signal pending financial troubles. However, frequently occurring illiquidity can make the difficulty so acute that the problem can no longer be ignored.

Cash flow problems can create either **technical** or **legal insolvency**. See also **Technical insolvency** and **Legal insolvency**]

A firm that finds itself in financial distress due to a state of insolvency or failure to satisfy a bond indenture has several alternatives:

1. Do nothing, but hope something will come along to save the situation.

2. Attempt to sell out. The firm can try to find a buyer, but buyers of troubled firms may be few. Even if one can be found, the seller frequently feels fortunate to walk away with any portion of the original equity.

3. Seek adjustments with creditors outside the judicial process, commonly called a workout. Some arrangements between the firm and its creditors may permit it to keep operating with the hope that it can work its way out of trouble. Such adjustments usually take the form of extensions of repayment schedules and/or compositions of credit.

4. Seek court relief in bankruptcy proceeding in the form of a reorganization or liquidation.

5. Assign assets to a third party for liquidation.

6. Liquidate.

56. Insolvent

The financial position of a firm whose market value of stockholders' equity is less than or equal

to zero. A firm is technically insolvent when the book value of stock holders' equity is less than or equal to zero.

57. Installment Loan

A loan that is payable in periodic, partial installments.

58. Instantaneous Forward Rate

Forward rate for a very short period of time in the future.

59. Instruments

Financial securities, such as (i) money market instruments (e.g., commercial paper) or (ii) capital market instruments (e.g., stocks and bonds).

60. Insurance Principle (the Law Of Averages)

The average outcome for many independent trials of an experiment will approach the expected value of the experiment.

61. Interbank Loan

Credit extended from one bank to another.

62. Interest Coverage Ratio

Earnings before interest and taxes divided by interest expense. Used to measure a firm's ability to pay interest. [See also **Capital structure ratios**]

63. Interest on Interest

Interest earned on reinvestment of each interest payment on money invested.

64. Interest Rate Cap

An option that provides a payoff when a specified interest rate is above a certain level. The interest rate is a floating rate that is reset periodically. The interest rate cap pays the difference between the realized interest rate in a period the interest cap rate.

65. Interest Rate Collar

A combination of an interest rate cap and an interest rate floor. The purchase of an interest rate collar is actually the simultaneous purchase of an interest rate cap and sale of an interest rate floor on the same index for the same maturity and notional principal amount.

66. Interest Rate Derivative

A derivative whose payoffs are dependent on future interest rate.

67. Interest Rate Floor

An option that provides a payoff when an interest rate is below a certain level. The interest rate is a floating rate that is reset periodically.

68. Interest Rate Option

An option where the payoff is dependent on the level of interest rates.

69. Interest Rate Parity

Under interest rate parity, investors are indifferent between investing at home or abroad as far as expected return is concerned; any existing nominal risk-free interest rate disparity is offset by spot and forward exchange rate differentials. When interest rate parity exists, the following relationship is true:

$$S_0 \times (1 + R_{FC})/F_1 = (1 + R_{US}).$$

The left-hand side of the equation reflects the return from converting dollars at the spot rate (S_0), investing them at the foreign rate ($1 + R_{FC}$), and then converting the currency back into dollars at the forward rate (F_1). The right-hand side reflects the return from investing the dollars in the US.

70. Interest Rate Risk

The general level of interest rates in an economy does not remain fixed; it fluctuates. For example, interest rates will change in response to changes in investors' expectations about future inflation rates. From the "**seesaw effect**," a rise in interest rates renders the fixed coupon interest payments on a bond less attractive, lowering its price. See also **Seesaw effect**]Therefore, bondholders are subject to the risk of capital loss from such interest rate changes should the bonds have to be sold prior to maturity.

A longer term to maturity, all else being equal, increases the sensitivity of a bond's price to a given change in interest rates, as the discount rate change compounds over a longer time period. Similarly, a lower coupon rate also increase the sensitivity of the bond's price to market interest rate changes. This occurs since lower coupon bonds have most of their cash flow occurring further into the future, when the par value is paid.

Because of interest rate risk, investors will demand a larger risk premium for a bond whose price is especially sensitive to market interest rate changes. Hence, we would expect higher yields to maturity for long-term bonds with low coupon rates than for short-term bonds with high coupon rates.

71. Interest Rate Swap

An interest rate swap is a financial transaction in which two borrowers exchange interest payments on a particular amount of principal with a specified maturity. The swap enables each party to alter the characteristics of the periodic interest payments that it makes or receives.

The exchange might involve swapping a fixed-rate payment for a variable payment or the payment of one type of floating rate for another. All swaps trade only interest payments made on underlying note values; no principal payments need to change hands with a simple interest rate swap.

The two primary parties to the swap are called counterparties. Usually, although not always, a financial institution serves as an intermediary between the counterparties. In the typical interest rate swap, the counterparty with the fixed-rate debt pays a premium over the rate the other counterparty initially paid on its variable-rate debt. This premium is based upon factors such as the terms of the swap, the creditworthiness of the counterparties, and the conditions in the market for fixed-rate and variable-rate debt.

It is unusual for two companies to arrange an interest rate swap themselves. In most cases, intermediaries act as brokers, dealers, or principals to the transaction. As a broker or dealer, the intermediary serves to bring the counterparties together and collect an arrangement fee. However, in most swaps, the intermediary acts as a principal to both counterparties, assuming the credit risk in the event that one counterparty defaults. When the intermediary acts as the principal to a swap, its compensation is in the form of an arrangement fee and/or the spread between the terms of the two counterparties.

72. Interest Rates

The level and trend of interest rates play major roles in both financing and the investment decisions made my firms. Changes in interest rates may result in changes in a firm's bond and stock price as well as in the rates charged the firm by banks and other lenders. Such changes may affect the cost of financing enough to make an apparently profitably project turn unprofitable, or vice versa. The difference between long-term and short-term interest rates may influence a firm's decision to issue bonds or seek short-term financing.

Interest rates are the price of money. A borrower uses funds today, promising to repay them over time from future income. A saver forgoes current spending in order to store currency income in the expectation of earning a return that will increase the value of those savings over time.

Thus, interest rates reflect the cost of moving income across time.

As with any price, interest rates rise and fall because of changes over time in demand and supply; in this case, the demand and supply of capital. There is not just one interest rate; there are a myriad of interest rates and therefore, expected investment returns~~from~~ rates on short-term certificates of deposit at the bank, to rates offered on bonds issued by multinational corporations, to expected stock markets returns. Interest rates or expected returns on these investments differ because of risk difference between them.

73. Interest Subsidy

A firm's deduction of the interest payments on its debt from its earnings before it calculates its tax bill under current tax law.

74. Intermarket Spread Swap

Switching from one segment of the bond market to another (for example from Treasuries to corporates).

75. Internal Audit

Routine examination of a bank's accounting records.

76. Internal Financing

Net income plus depreciation minus dividends, internal financing comes from internally generated cash flow such as retained earnings.

77. Internal Growth Rate

The internal growth rate measures how quickly a firm can increase its asset base over the next year without raising outside funds. It does not measure divisional growth or break down total growth into domestic or international components. More detailed analysis must be done to estimate the forces that determine growth rates. The internal growth rate gives a general, companywide value.

The internal growth rate is equal to the ratio of the expected increase in retained earnings (ΔRE) over the next year to the current total asset base (TA_0) as:

$$\frac{\Delta RE}{TA_0}.$$

This also can be written as:

$$\text{Internal growth rate} = \frac{(RR)(ROA)}{1 - (RR)(ROA)}.$$

RR is the firm's retention rate, and ROA is its return on assets. The internal growth rate divides the product of these values by one minus this product.

Most managers plan and think in terms of sales dollars rather than asset size, so it may help to relate the internal growth rate to sales growth.

We can roughly estimate a sales growth rate by recalling the total asset turnover ratio, which equals sales divided by total assets. If management can assume that this ratio will remain constant into the foreseeable future, the growth in sales will equal the internal growth rate.

The internal growth rate makes the restrictive assumption that the firm will pursue no outside sources of financing. Should the firm grow at its internal growth rate, its retained earnings account will continually rise (assuming profitable sales), while its dollar amount of debt outstanding will remain constant. Thus, the firm's debt-to-equity ratio declines over time, until debt falls below its correct proportion in management's ideal financing mix.

78. Internal Rate of Return

The internal rate of return (IRR) is a discounted cash flow concept and represents the discount rate at which the present value of a project's cash flows equal the project's cost. This implies that the IRR

of a project is the discount rate that sets the project's net present value (NPV) to zero. The internal rate of return can be found by solving for IRR in the following present value relationship as:

$$NPV = \sum_{t=1}^{N} \frac{CF_t}{(1 + IRR)^t} - I = 0,$$

where I = initial outlay; CF_t = cash flow in period t; and N = number of periods of project.

If a project has a positive NPV when its cash flows are discounted at the required return, the project's IRR will exceed this required return. Graphically, for any required rate of return below the IRR, the net present value of the project is positive. For any required rate of return greater than the IRR, the NPV is negative.

Thus, the IRR technique has a clearly defined and objective decision rule: accept all projects with IRRs that exceed their minimum required rate of return since those projects will increase shareholder wealth. If the IRR is less than the required return, then the project should be rejected, as it will reduce shareholder wealth. Both the NPV and IRR methods will always agree as to whether a project will increase or decrease shareholder wealth. Although the IRR and NPV are related, the meaning of the IRR is more complex than that of the NPV.

Unlike NPV, IRR does *not* measure the absolute dollar amount by which a project will change shareholder wealth. The IRR tells us nothing about the size of the change in shareholder wealth. Thus, we can say that IRR is a relative, not an absolute, measure of project attractiveness – one project's IRR may be higher, while its NPV is lower, than that of another project.

Thus, IRR satisfies only three of the four capital selections. It considers all cash flows, incorporates the time value of money, and it has an objective decision criterion. But it does not measure the size of the project's impact on shareholder wealth. [See also **Appendix C** for the timing problem of the IRR Method]

79. International Capital Asset Pricing Model

It is being use to test whether assets are best regarded as being traded in segmented (national) or integrated (international) markets, found some evidence that markets are integrated. It can be state as:

$$E(R_i^j) = R_f + \beta_{wi}^j \left[E(R_w) - R_f \right]$$

where $E(R_i^j)$ = expected rate of return on ith security (or portfolio) in country j; R_f = the risk-free rate of interest; and $E(R_w)$ = expected rate or return on the world market portfolio;

$\beta_{wi}^j = (\rho_{i,w} \sigma_i \sigma_w)/\sigma_w^2$ or the correlation coefficient between the rate of return on security i in country j and the world market, times the standard deviation of security i, times the standard deviation of the world market, divided by the variance of the world market portfolio. It is also the International system risk of country j.

80. International Fisher Effect

The International Fisher effect shows a) the relationship between the expected exchange rate change and the inflation rate differential, and b) the relationship between the inflation rate differential and the interest rate differential. The equation is as follows:

$$\frac{E(S_1)}{S_0} = \frac{1 + h_{FC}}{1 + h_{US}} = \frac{1 + R_{FC}}{1 + R_{US}},$$

where S_0 and $E(S_1)$ are the current spot exchange rate and expected spot rate one year in the future, respectively. R_{US} and R_{FC} are nominal interest rates in US and foreign country, respectively. Finally, h_{US} and h_{FC} are inflation rates for US and foreign country respectively.

If the expected future spot rate, $E(S_1)$, is equal to the forward rate, F_1, then the equation reduces to the interest rate parity relationship:

$$F_1 = S_0 \frac{(1 + R_{RC})}{(1 + R_{US})}.$$

81. International Monetary Market (IMM)

A division of Chicago mercantile exchange. The Eurodollar futures contracts and associated option are traded at IMM.

82. International System Risk

[See also **International asset pricing model**]

83. Intertemporal Capital Asset Pricing Model

Allowing the investment opportunity set change over time, Merton (1973) develops the intertemporal capital asset pricing model, which introduces a hedge portfolio function into the model.

84. In-the-Money-Option

Either (a) a call option where the asset price is greater than the strike price or (b) a put option where the asset price is less than the strike price.

85. Intrinsic Value

For a call option, this is the greater of the excess of the asset price over the strike price and zero. For a put option, it is the greater of the excess of the strike price over the asset price and zero.

86. Intrinsic Value of an Option

Stock price minus exercise price, or the profit that could be attained by immediate exercise of an in-the-money option.

87. Inventory

A current asset, composed of raw materials to be used in production, work in process, and finished goods.

88. Inventory Conversion Period

The inventory conversion period is defined as inventory divided by cost of goods sold per day as:

Inventory conversion period

$$= \frac{\text{Inventory}}{\text{Cost of goods sold}/365 \text{ days}}.$$

89. Inventory Loan

A secured short-term loan to purchase inventory. The three basic forms are blanket inventory lien, a trust receipt, and field warehouse financing.

90. Inventory Turnover Ratio

Ratio of annual sales to average inventory that measures how quickly inventory is produced and sold. [See **Asset management ratios**]

91. Inverted Market

A market where futures prices decrease with maturity.

92. Inverted Yield Curve

Yield curve with long-term rates below short-term rates.

93. Investable Balances

Ledge balances minus float minus required reserves against associated deposit balances.

94. Investment Asset

An asset held by at least some individuals for investment purposes.

95. Investment Bankers

Financial intermediaries who perform a variety of services, including aiding in the sale of securities, facilitating mergers and other corporate reorganizations, acting as brokers to both individual and institutional clients, and trading for their own accounts.

96. Investment Banking

Activity involving securities underwriting, making a market in securities, and arranging mergers and acquisitions.

97. Investment Company

Firm managing funds for investors. An investment company may manage several mutual funds.

98. Investment Grade Bond

Debt that is rated BBB and above by Standard & Poor's or Baa and above by Moody's. Alternatively, it is lower-rated bonds are classified as speculative-grade or junk bonds.

99. Investment of Different Life

[See **Equivalent annual cost** and **Appendix D**]

100. Investment Opportunity Schedule

An investment opportunity schedule (IOS) is a chart or graph that relates the internal rate of return on individual projects to cumulative capital spending. To set up an investment opportunity schedule, the analyst first computes each project's internal rate of return (or modified internal rate of return). If mutually exclusive projects are part of the analysis, only the highest ranked projects go on to the next step.

After computing the individual modified internal rules of return (MIRR), the projects are ranked from highest to lowest by MIRR, keeping a tally of cumulative project spending.

101. Investment Portfolio

Set of securities chosen by an investor.

102. Investment Quality Bonds

Investment quality bonds have ratings of BBB by Standard &Poor's (or Baa by Moody's) or higher.

They are called investment quality as some institutional investors, such as pension funds and insurance companies, restrict themselves to investing only in these low-default risk issues.

103. Investment Trigger Price

The price of an investment project (or the price of the good to be produced) at which it is optimal to invest in the project.

104. Investments

An area within finance is the study of investments. Students of investments learn how to analyze the investor's stake in stocks, bonds, and other financial instruments. This analysis focuses on evaluating the cash flow from such financial assets to decide whether they represent attractive investments. As in the other fields of finance, the analyst also must plan how to manage the assets in an investment portfolio to meet future liabilities (such as college tuition, a new car or house, or retirement income).

105. Invoice

Bill written by a seller of goods or services and submitted to the purchaser.

106. Invoicing Float

[See also **Float**]

107. IO

Interest Only. A mortgage-backed security where the holder receives only interest cash flows on the underlying mortgage pool.

108. Irrelevance Result

The Miller and Modigliani (1958) theorem that a firm's capital structure is irrelevant to the firm's

value when there are no taxes and other assumptions hold.

109. Irrevocable Letter of Credit

International trade often requires banker's acceptances, as well as even more formal arrangements. An exporter that requires even greater certainty of payment may request an irrevocable letter of credit. In this arrangement, the customer's bank sends the exporter a letter stating that it has established a line of credit for the customer with a particular US bank. The exporter then can collect payment from the US bank before making the delivery. The US bank forwards the appropriate documents to the customer's bank to receive reimbursement.

110. ISDA (Institutional Swap Dealers Association)

A committee sponsored by this organization was instrumental in drafting an industry standard under which securities dealers would trade swaps. Including in this draft of a master agreement by which institutions outlined their rights to net multiple offsetting exposures which they might have to counterparty at the time in credit quality.

111. Iso-Expected Return Line

Line, drawn on a mapping of portfolio weights, which shows the combinations of weights all of which provide for a particular portfolio rate of return.

112. Iso-Variance Ellipse

Ellipse, drawn on a mapping of portfolio weights, which shows the combinations of weights all of which provide for a particular portfolio variance.

113. Issuer Exposure

The credit risk to the issuer of traded instruments (typically a bond, but also swaps, foreign exchange, etc.) Labeling credit spread volatility as either market or credit risk is a question of semantics. CreditMetrics addresses market price volatility as it is caused by changes in credit quality. [See also **CreditMetrics**]

114. Itô Process

A stochastic process where the change in a variable during each short period of time of length δt has normal distribution. The mean and variance of the distribution are proportional to δt and are not necessarily constant. [See also **Random Equation**]