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1. Calendar Spread

A position that is created by taking a long position in a call option that matures at one time and a short position at a different time. (A calendar spread can also be created using put options.)

2. Calibration

Method for implying a model's parameters from the prices of actively traded options.

3. Call

A call is an option to purchase a fixed number of shares of common stock. It is a right instead of an obligation. Calls can be either buy a call or write a call.

4. Call Deferment Periods

[See **Callable bonds**]

5. Call Loan

A call loan is a loan contract which enables the lender (e.g., the bank) to request repayment of loan in the contract period. For example, most broker loans to investment banks are callable within 24 hours notice.

6. Call Money Rate

It is the rate charged by brokers for the use of margin in common-stock accounts.

7. Call Option

A call option gives the holder the right to buy a particular number of shares of a designated com-

mon stock at a specified price, called the **exercise price** (or striking price), on or before a given date, known as the **expiration date**. [See also **Exercise price** and **Expiration date**] On the Chicago Board Options Exchange, options typically are created for three-month, six-month, or nine-month periods. All have the same expiration date: the Saturday following the third Friday of the month of expiration. The owner of the shares of common stock can write, or create, an option and sell it in the options market, in an attempt to increase the return or income on a stock investment.

8. Call Premium

It refers to the price of a call option on common stock. It also refers to the difference between the call price and the face value. [See also **Callable bonds**]

9. Call Price of a Bond

Amount at which a firm has the right to repurchase its bonds or debentures before the stated maturity date. The call price is always set at equal to or more than the par value. [See also **Callable bonds**]

10. Call Protected

Describes a bond that is not allowed to be called, usually for a certain early period in the life of the bond.

11. Call Protection

The feature which does not allow a bond to be called for some (deferment) period.

12. Call Provision

A written agreement between an issuing corporation and its bondholders that gives the corporation the option to redeem the bond at a specified price before the maturity date. A call provision lets the company repurchase or call the entire bond issue at predetermined price over a specific period.

13. Call Risk

[See **Callable bonds**]

14. Callable

Refers to a bond that is subject to be repurchased at a stated call price before maturity. For example, debt may be extinguished before maturity by a call. Historically, almost all publicly issued corporate long-term debt has been callable.

15. Callable Bonds

Callable bonds can be redeemed prior to maturity by the firm. Such bonds will be called and redeemed if, for example, a decline in interest rates makes it attractive for the firm to issue lower coupon debt to replace high-coupon debt. A firm with cash from successful marketing efforts or a recent stock issue also may decide to retire its callable debt.

Callable bonds usually are called away after a decline in interest rates. As rates fall, the bond's price will not rise above its call price. Thus, for callable bonds, the inverse relationship between bond prices and interest rates breaks down once the bond's market price reaches the call price.

Many indentures state that, if called, callable bonds must be redeemed at their **call prices**, typically par value plus a **call premium** of one year's interest.

Investors in callable bonds are said to be subject to **call risk**. Despite receiving the call price, investors usually are not pleased when their bonds are called away. As bonds typically are called after a substantial decline in interest rates, the call eliminates their high coupon payments; they can reinvest the funds only in bonds that offer lower yields.

In order to attract investors, callable bonds must offer higher coupons or yields than noncallable bonds of similar credit quality and maturity. Many indentures specify **call deferment periods** im-

mediately after the bond issue, during which the bonds cannot be called.

16. Call-Loan Money Rate

The rate charged by banks to brokers who deposit securities as collateral.

17. CAMELS

An acronym that refers to the regulatory rating system for bank performance: C = capital adequacy, A = asset quality, M = management quality, E = earnings quality, L = liquidity, and S = sensitivity to market risk.

18. Cancelable Swap

A cancelable swap is a plain vanilla interest rate swap. This kind of swap can be canceled by one side on prespecified dates.

19. Cannibalization

Cannibalization occurs when a project robs cash flow from the firm's existing lines of business. For example, when a soft-drink firm is thinking about introducing a new flavor or a new diet product, the project's incremental cash flows should consider how much the new offering will erode the sales and cash flows of the firm's other product lines.

20. Cap

An options contract that serves as insurance against a high price. [See also **Interest rate cap**]

21. Cap Rate

The rate determining payoffs in an interest rate cap. [See **Interest rate cap**]

22. Capital

Funds subscribed and aid by stockholders representing ownership in a bank. In other words,

capital is the stockholder's equity of a bank. Regulatory capital also includes debt components and loss reserves. It can be defined either in book value or market value. The market value of capital is used as an insulation device against credit risk and interest rate risk. [See **Credit risk** and **Interest rate risk**]

23. Capital Allocation Decision

Allocation of invested funds between risk-free assets versus the risky portfolio. [See also **Asset allocation decision**]

24. Capital Allocation Line (CAL)

A graph showing all feasible risk-return combinations of a risky and risk-free asset. [See also **Capital market line**]

25. Capital Asset Pricing Model (CAPM)

An equilibrium asset pricing theory that shows that equilibrium rates of expected return on all risky assets are a function of their covariance with the market portfolio. [See **Sharpe, *Journal of Finance*, September 1964**]

$$E(R_i) = R_F + \beta(E(R_m) - R_F).$$

Thus, expected return on *i*th security = Risk-free rate + Beta coefficient (Expected return on market portfolio – Risk-free rate). Because the term in parentheses on the right-hand side is positive, this equation says that the expected return on a security is a positive function of its beta.

26. Capital Budgeting

Capital budgeting is the process of identifying, evaluating, and implementing a firm's investment opportunities. Because of their size and time horizon, a firm's capital projects should reflect its strategy for meeting future goals. The typical capital budgeting project involves a large up-front cash

outlay, followed by a series of smaller cash inflows and outflows. A project's expected time frame may be as short as one year or as long as 20 or 30 years. But the project's cash flows, including the total up-front cost of the project, are not known with certainty before the project starts. The firm must evaluate the size, timing, and risk of the project's cash flows to determine if it enhances shareholder wealth.

Broadly speaking capital budgeting can be described as a three-phase process that includes a **planning phase**, an **appropriation phase**, and an **audit or control phase**. [See also **Planning phase of capital budgeting**, **Appropriation phase of capital budgeting**, and **Audit or Control phase**]

27. Capital Gains

The positive change in the value of an asset. A negative capital gain is a capital loss. It is the change in the price of the stock divided by the initial price. Letting P_t be the purchaser price of the asset and P_{t+1} be the price of the asset at year-end, the capital gain can be computed.

$$\text{Capital gain} = (P_{t+1} - P_t)/P_t.$$

28. Capital Lease

A capital lease or **financial lease** of an asset satisfies any one of the following criteria:

1. The lessee takes ownership of the asset at the end of the lease.
2. The lessee can purchase the asset at the end of the lease at a bargain price (less than fair market value).
3. The length of the lease equals 75 percent or more of the estimated life of the asset.
4. At the beginning of the lease, the present value of the lease payments is 90 percent or more of the fair market value of the property.

Typically, the lessee may not cancel a capital financial lease and is responsible for asset

maintenance. In a financial lease, tax law identifies the lessor as the owner of the leased asset, so the lessor can deduct asset depreciation over the life of the lease.

29. Capital Market Line

The efficient set of all assets, both risky and riskless, which provides the investor with the best possible opportunities. The line used in the risk-return trade-off to illustrate the rates of return for efficient portfolios depending on the risk free rate of return and the level of risk (standard deviation) for a particular portfolio.

In sum, formula for capital market line used to describe the trade-off between expected return and total risk is

$$E(R_i) = R_f + [E(R_m) - R_f] \frac{\sigma_i}{\sigma_m},$$

where R_f = risk-free rate, $E(R_m)$ = expected return on the market portfolio, $E(R_i)$ = expected return on the i th portfolio, and σ_i , σ_m = standard deviations of the portfolio and the market, respectively.

30. Capital Market Securities

The classification of a financial instrument as a marketable security typically is based upon maturity and, to a lesser extent, liquidity. Securities with more than one year to maturity, such as stocks, bonds, and mortgages, are called capital market securities.

31. Capital Markets

Financial markets for long-term debt (with a maturity at over one year) and for equity shares. The financial markets are composed of the money markets and the capital markets. The markets where capital, such as stocks and bonds, are traded. Capital markets are used by firms to raise additional funds.

32. Capital Rationing

Capital rationing places an upper limit on the amount of a firm's capital spending over the course of a year. The first break point in a cost of capital schedule usually occurs when a firm runs out of current retained earnings. An easy way to handle the marginal cost of capital problem is to ration capital by setting the upper limit of spending at the point where the firm will run out of retained earnings.

The deficiency in this strategy is rather obvious. To maximize shareholder wealth, the firm should be willing to undertake *any* project with a positive NPV, whether or not total spending exceeds one or more break points.

33. Capital Structure

The mix of debt and equity a firm uses to finance its assets defines the firm's capital structure. A target capital structure is important as it determines the weights in the calculation of a firm's weighted average cost of capital (WACC). There is, however, a second and even more important reason: The firm's *optimum* debt-to-equity mix minimizes the WACC; minimizing the WACC will help the firm to maximize shareholder wealth.

If a nonoptimal capital structure leads to a higher WACC, the firm is likely to reject some capital budgeting projects that could increase its competitive advantage and shareholder wealth under an optimal target financing mix.

34. Capital Structure Ratios

Capital structure ratios (sometimes called *debt utilization* or *leverage ratios*) compare the funds supplied by the owners (equity) with the funds provided by creditors (debt). The **debt-to-assets ratio** is calculated as total debt (i.e., the sum of current and long-term liabilities) divided by total assets; it measures the proportion of assets financed by borrowers. The **debt-to-equity ratio** is computed as total debt div-

ided by stockholders' equity. The two ratios are computed as:

$$\text{Debt-to-assets ratio} = \frac{\text{Total debt}}{\text{Total assets}}$$

$$\text{Debt-to-equity ratio} = \frac{\text{Total debt}}{\text{Total equity}}.$$

The **equity multiplier** is another indicator of a company's use of debt. At first glance, the ratio appears to have little to do with leverage; it is simply total assets divided by stockholders' equity. Recall the accounting identity, however: Assets = Liabilities + Equity. More assets relative to equity suggest a greater use of debt. Thus, larger values of the equity multiplier imply a greater use of leverage by the firm. The equity multiplier is written as:

$$\text{Equity multiplier} = \frac{\text{Total assets}}{\text{Total equity}}.$$

As a rough measure of the firm's ability to service its debt and other fixed obligations, the analyst can calculate the **times interest earned (TIE)** (or **interest coverage) ratio**. The times interest earned ratio is earnings before interest and taxes (EBIT) divided by interest expense. This ratio provides a measure of how well the firm's operations generate funds to pay interest expenses. EBIT can fall by $(1-1/\text{TIE})$ before interest payments are jeopardized. For example, a TIE ratio of 5 indicates that EBIT could fall by $(1-1/5)$ or 80 percent before earnings would fail to cover interest obligations. The times interest earned ratio is given by:

$$\text{Times interest earned ratio} = \frac{\text{EBIT}}{\text{Interest expense}}.$$

An alternative to the TIE ratio, the **fixed charge coverage ratio** is computed as earnings before fixed charges divided by fixed charges. It is more general than TIE, since the denominator includes all fixed charges, such as interest payments, lease payments, bond sinking fund obligations, and so on. However, looking at the fixed charge coverage ratio may give analysts a fuller picture of the firm's ability to pay all of its fixed obligations.

By using appropriate amounts of debt and equity, the firm can minimize its financing costs and thereby maximize shareholder wealth. This suggests that analysts may see danger signals in both high and low ratios. High debt ratios increase the potential of bankruptcy; low debt ratios may indicate that management is not using debt efficiently to maximize shareholder wealth.

35. Capital Surplus

Amounts of directly contributed equity capital in excess of the par value. Equity which cannot otherwise be classified as capital stock or retained earnings. It's usually created from a stock issued at a premium over par value. Capital surplus is also known as share premium (UK), acquired surplus, donated surplus, paid-in surplus, or additional paid-in capital.

36. Capital-Labor Ratio

A production function is a function that can be seen as a function of labor and capital as:

$$Q = f(K, L),$$

where K = capital and L = labor. The capital-labor ratio (K/L) is generally used to measure a firm's degree of capital intensity. Capital intensity results in increased total risks and generally results in an increase in beta. If the capital-labor ratio is greater than one – that is, if K is greater than L – a firm is capital intensive. If the ratio is less than one, then there is a deduction in capital intensity and a shift towards human-resource investment.

37. Caplets

The individual options comprising a cap are sometimes referred to as caplets. An interest rate cap is a series of consecutive long call options (caplets) on a specific interest rate at the same strike price.

38. Capped Option

An option with a maximum payoff, where the option is automatically exercised if the underlying asset reaches the price at which the maximum payoff is attained.

39. Captive Finance Company

A finance company owned by a manufacturer that provides financing to buyers of the firm's products. For example, General Motors Acceptance Corporation is a captive finance company.

40. Car

A loose term sometimes used to describe the quantity of a contract, for example, "I am long a car of bellies." (Derived from the fact that quantities of the product specified in a contract used to correspond closely to the capacity of a railroad car.)

41. CARs

Collateralized automobile receivables (CARs) is a form of asset-backed security in which the collateral is automobile receivables. Other types of account receivable can be used to create asset-backed security also.

42. Card Bank

Bank that administers its own credit card plan or serves as a primary regional agent of a national credit card operation.

43. Cardinal Utility

A cardinal utility implies that a consumer is capable of assigning to every commodity or combination of commodities a number representing the amount or degree of utility associated with it. [See also **Ordinal utility**]

44. Carry

Another term for owning an asset, typically used to refer to commodities. [See also **Carry market** and **Cost of carry**]

45. Carry Market

A situation where the forward price is such that the return on a cash-and-carry is the risk-free rate. Cash-and-carry refers to the simultaneous spot purchase and forward sale of an asset or commodity.

46. Carrying Costs

Costs that increase with increases in the level of investment in current assets. Costs that fall with increases in the level of investment in current assets are called shortage costs. Carrying costs are generally of two types. First, because the rate of return on current assets is low compared with that of other assets, there is an opportunity cost. Second, there is the cost of maintaining the economic value of the item. For example, the cost of warehousing inventory belongs here.

47. Carrying Value

Book value. It is an accounting number based on cost.

48. Carve Outs

[See **Voluntary restructuring**]

49. Cash Basis

The accounting procedure that recognizes revenues when cash is actually received and expenses when cash is actually paid.

50. Cash Breakeven

Cash breakeven occurs when a project's cash inflows equal its cash outflows. Thus, the project's period-by-period operating cash flow is zero. The formula for the cash breakeven point (Q_{cash}^*) is as:

$$Q_{\text{cash}}^* = \frac{FC}{p - vc},$$

where FC = fixed costs, VC = variable cost per unit, and P = price per unit.

For any project operating at cash breakeven, net income (ignoring taxes) will equal depreciation expense. This stands to reason. Ignoring working capital for cash flow from operating activities, we know that operating cash flow (OCF) equals net income (NI) plus depreciation (Dep): $OCF = NI + \text{Dep}$. In the case of cash break-even, OCF is zero, so $NI = -\text{Dep}$.

Cash breakeven tells us how much product must be sold so that the firm's overall operating cash flows are not reduced.

51. Cash Budget

A forecast of cash receipts and disbursements expected by a firm in the coming year. It is a short-term financial planning tool. It allows the financial manager to identify short-term financial needs (and opportunities). It will tell the manager the required borrowing for the short term. It is the way of identifying the cash-flow gap on the cash-flow time line. The basic relation is

$$\begin{aligned} &\text{Ending accounting receivable} \\ &= \text{Starting accounting receivable} + \text{Sales} - \text{Collection.} \end{aligned}$$

Collection is not the only source of cash, other sources of cash include sales of assets, investment income, and long-term financing.

52. Cash Budget Process

A cash budget shows the cash flow that the firm anticipates in the upcoming period, given various

scenarios. This budget goes beyond a simple summation to cash receipts and disbursements. Rather, it attempts to forecast the actual timing of the cash flows into and out of the business. The precision of the budget depends upon the characteristics of the organization, the degree of uncertainty about the business environment, and the ability of the planner to accurately forecast the future cash flows. The budget process is characterized by five steps:

1. Forecasting sales.
2. Projecting all cash inflows, including forecasted receipts.
3. Projecting all cash outflows.
4. Interrelating the inflows and the outflows, subject to policy decisions of the firm's management.
5. Determining the excess or shortage of cash during the period.

Every cash budget must begin with a forecast of sales, which normally is supplied to the financial planner by the firm's marketing department. The primary source of cash inflow for many firms is not sales, but the collection of accounts receivable. In addition, the firm may raise cash from external sources through short-term or long-term financing or the sales of assets. These inflows also are part of the cash budget.

53. Cash Commodity

The actual physical commodity, as distinguished from a futures commodity. A commodity delivered at the time of sale is a cash commodity while a commodity to be delivered at a specific future date is a future commodity.

54. Cash Concentration Systems

A cash concentration system is designed to move funds from many small accounts into one or several large master accounts as efficiently as possible. A cash concentration network improves the

financial manager's control of company cash by accumulating balances in one large account. The manager may be able to forecast total cash flows for the master account with a smaller percentage error than that associated with estimating cash balances of many small accounts. In addition, the manager can invest these funds at higher rates, since pooled funds can buy larger blocks of investment securities or money market instruments that are sold in large denominations. Finally, the cash concentration network can help reduce both excess balances in many small banks and expenses for transferring funds.

A concentration network uses DTCs (depository transfer check), wire transfers, and lockboxes to improve the efficiency of the firm's cash flows and investments. The type of system that a firm employs will depend upon the average dollar volume of its transactions, the number and sophistication of its banks, the timing and type of information that it requires, and the current opportunity cost of float. For example, DTCs are preferable to wire transfers when transferring funds in small dollar amounts through a volume of transactions, since DTCs are much less expensive than wire transfers. However, a high volume of transactions involving disbursements that are known ahead of time (such as payroll) might induce the firm to use an Automated Clearing House (ACH) transfer. ACH transfers often handle high-volume transactions and regular (or batch) transactions, and they usually can make the funds available in one business day. Although the ACH cannot provide the same immediate availability as wire transfer, it is slightly less expensive than a DTC and may serve a useful purpose when handling certain types of payments. Cash concentration systems are improving firms' float management and information gathering. For example, ACH tapes now can be deposited on weekends to help reduce the firm's risk of overdrafts. Future cash concentration systems should continue to make strides in reducing excess balances, administrative costs, and transfer costs while providing the manager with more reliable information to help with

investing cash and arranging appropriate lines of credit.

55. Cash Conversion Cycle

The cash conversion cycle is the net time interval between the actual cash outflow to pay accounts payable and the inflow of cash from the collection of accounts receivable.

The cash conversion cycle reflects the fact that some of the firm's inventory purchases are not immediately associated with cash outflows. Rather, the timeline shows that the firm buys inventories and then pays for them at some later time. Therefore, the cash conversion cycle is the distance on the timeline between payment for inventories and collection of accounts receivable as:

$$\text{Cash conversion cycle} = \text{Operating cycle} \\ - \text{Payable deferral period,}$$

where Operating cycle

$$\text{Receivable collection period} = \left(\frac{\text{Accounts receivable}}{\text{sales}/365 \text{ days}} \right);$$

$$\text{Inventory conversion period} \\ = \left(\frac{\text{Inventory}}{\text{Cost of goods sold}/365 \text{ days}} \right).$$

A shorter cash conversion cycle makes a firm more liquid. This makes it an excellent tool by which to measure the overall liquidity of a firm. The cash conversion cycle helps the manager to model cash flow management decisions on a timeline to clearly show their effects. For example, if the firm introduces a new system to collect accounts receivable more quickly, the manager can compare the cash conversion cycles under the old and new systems to evaluate the effects of the new system. Other financial or operating decisions also can be incorporated into the cash conversion cycle framework to provide a method of analyzing their effects on the firm's cash flows.

The cash conversion cycle quantifies the time it takes for cash to flow out through the working capital accounts and back in to the cash accounts. Es-

essentially, the cycle begins when the organization pays cash for an investment in current assets and ends when cash flows back to the organization as payment for its goods or services. The short-term financial planner's first task is to identify the firm's cash flow cycle. The next step is to focus on how to speed up inflows and slow down outflows in the most cost-effective fashion. If we use average inventory, average accounts receivable (AR), and average accounts payable (AP) to replace inventory, AR, and AP, the cash conversion cycle can be rewritten as:

$$\begin{aligned} & \text{Cash conversion cycle} \\ &= \text{Average age of inventory} \\ & \quad + \text{Average age of accounts receivable} \\ & \quad - \text{Average age of accounts payable} \\ &= (\text{No. of days in planning period}) \\ & \quad \times \left[\frac{\text{Average inventory}}{\text{Cash operating expenditures}} \right. \\ & \quad + \frac{\text{Average accounts receivable}}{\text{Sales}} \\ & \quad \left. - \frac{\text{Average accounts payable}}{\text{Cost of goods sold}} \right], \end{aligned}$$

where Average inventory = (Beginning inventory + Ending inventory) / 2, Average accounts receivable = (Beginning AR + Ending AR) / 2, and Average accounts payable = (Beginning AP + Ending AP) / 2.

56. Cash Cow

A company that pays out all earnings per share (EPS) to stockholders as dividends (Div). Hence, $EPS = Div$. The value of a share of stock becomes: $\frac{EPS}{r} = \frac{Div}{r}$, where r is the discount rate on the firm's stock. Cash cow project represents a strong market share and low market growth project.

57. Cash Cycle

In general, the time between cash disbursement and cash collection. In net working capital man-

agement, it can be thought of as the operating cycle less the accounts payable payment period. The cash cycle begins when cash is paid for materials and ends when cash is collected from receivables. [See also **Cash conversion cycle**]

58. Cash Delivery

The provision of some futures contracts that requires not delivery of the underlying assets (as in agricultural futures) but settlement according to the cash value of the asset.

59. Cash Disbursement Systems

The primary purpose of a disbursement system is to minimize the net cost of delivering payments to a company's employees, suppliers, and stockholders. Such a system must consider several categories of cost:

1. Opportunity costs from investments not made or interest expenses for unnecessary borrowings.
2. Transfer costs associated with moving funds from one location to another.
3. Cost associated with lost discounts, or opportunity costs of late or early payments.
4. Costs associated with vendor/employee ill will.
5. Managerial costs of handling the disbursement system.
6. Costs of any unauthorized disbursements.

To reduce opportunity costs, a firm can design the system to increase disbursement float. [See also **Disbursing float**] This can be accomplished, for example, by mailing checks from a remote disbursement location. The manager must balance the benefit of such a technique against the potential cost in strained relationships with vendors, though. Intentionally late payments or exaggerated mail float might create ill will among vendors and employees and cause the firm problems in the future.

60. Cash Discounts

The most obvious cost of a cash shortage comes from the inability to take advantage of suppliers' cash discounts by paying bills promptly. Most firms buy materials and supplies on terms of "2/10, net 30," which means that the buyer can deduct 2 percent from its bill if it pays within 10 days of receiving it, and that the payment in full is due within 30 days. Now, 2 percent may not sound like very much, but it allows you to use \$98 for 20 more days of credit (the difference between 10 days and 30 days). This is an effective rate of 2.04 percent (2/98). To realize the true cost of bypassing the discount, convert the percentage to an annual rate: 20 days is about one-eighteenth of a year, so the true rate is 2.04 percent times 18.25, or 37 percent. In other words, by paying its bills 20 days after the discount date, the company is in effect borrowing money at an annual interest rate of 37 percent.

The annualized cost of foregoing a discount can be found by the following general formula:

$$\begin{aligned} \text{Annual cost of foregoing a discount} = & \\ & \frac{\text{Percentage cash discount}}{100\% - \text{Percentage cash discount}} \\ & \times \frac{365 \text{ days}}{\text{Date for net payment} - \text{Date of discount payment}}. \end{aligned}$$

It may be argued that when a cash-poor company pays its bills late to stretch out its funds, very probably it will not pay even after 30 days. It will, in fact, pay as late as possible. If we assume that the firm pays suppliers' bills 60 days after receipt rather than 30 days, it exchanges the discount of 2 percent for 50 days of additional credit. This reduces the cost of foregoing discounts from 37 percent to about 15 percent. However, such a policy cannot be maintained indefinitely. It greatly harms the company's relations with its suppliers and possibly with the financial community as well. Additionally, firms paying later may face interest charges imposed by their suppliers. Any such practice should certainly be reserved for real emergencies.

61. Cash Equivalents

Short-term money-market securities. In general, the first item of current assets in a balance sheet is "cash or cash equivalents."

62. Cash Flow after Interest and Taxes

Net income plus depreciation. It is also called net cash inflow in the capital budgeting decision.

63. Cash Flow From Operations

A firm's net cash flow from normal business operating activities used to assess the firm's ability to service existing and new debts and other fixed payment obligations.

64. Cash Flow Mapping

A procedure in which the cash flows of a given claim are assigned-to or mapped-to a set of benchmark claims.

65. Cash Flow Matching

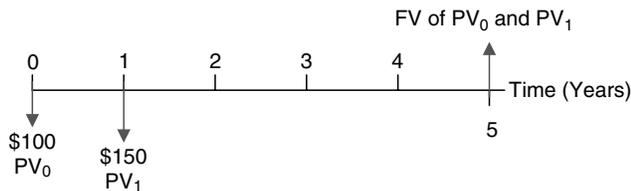
A form of immunization, matching cash flows from a bond portfolio with an obligation. [See also **Dedication strategy**]

66. Cash Flow Timeline

A cash flow timeline can be a useful tool for visualizing and identifying cash flows over time. A cash flow timeline is a horizontal line with up-arrows that represent cash inflows (that is, cash to be received by the decision maker) and down-arrows to indicate cash expenses or outflows. The down arrow at Time 0 represents an investment today; the up-arrow n periods in the future represents \$FV, the future value (or compounded value) of the investment. For example, today \$100 is invested in a five-year CD that advertises a 10 percent annual interest rate. One year later, an additional \$150 will be invested in a four-year

CD that pays 9 percent. How much money will be available when both CDs mature? Note that both CDs mature on the same date.

The cash flow timeline looks like this:



67. Cash Flows

Cash flows deal with the actual transfers of cash into or from the firm. Cash generated by the firm and paid to creditors and shareholders. It can be classified as (1) cash flow from operations, (2) cash flow from changes in fixed assets, and (3) cash flow from changes in net working capital.

68. Cash Letter

Transit letter on tape that lists items submitted between banks for collection.

69. Cash-market

The spot market for the immediate exchange of goods and services for immediate payment.

70. Cash Offer

Selling shares of seasoned equity to the public is called a cash offer. Usually, an investment bank is involved in the sale in one of three ways. A firm can issue seasoned equity using a firm commitment underwriting, by selling all or part of a previously shelf-registered issue, or through a competitive bidding process.

71. Cash Settlement

A procedure where settlement entails a cash payment from one party to the other, instead of delivery of an asset.

72. Cash Transaction

A transaction where exchange is immediate, as contrasted to a forward contract, which calls for future delivery of an asset at an agreed-upon price. It is a contrast to a forward contract. For example, if the book had been on the bookstore's shelf, your purchase of it would constitute a cash transaction.

73. Cash/bond Selection

Asset allocation in which the choice is between short-term cash equivalents and longer-term bonds.

74. Cash-and-Carry

The simultaneous spot purchase and forward sale of an asset or commodity.

75. Cashier's Check

A bank check that is drawn on the bank issuing the check and signed by a bank officer.

76. Cash-or-Nothing Call

An option that pays a fixed amount of cash if the asset price exceeds the strike price at expiration. If the asset price is equal or smaller than the strike price, then the call holder gets nothing.

77. Cashout

Refers to situation where a firm runs out of cash and cannot readily sell marketable securities. It may need to borrow or default on an obligation. Therefore, cash management is very important for a company to avoid the situation. [See also **Baumol's economic order quantity model**]

78. Cash-to-Cash Asset Cycle

The time it takes to accumulate cash, purchase inventory, produce a finished good, sell it, and collect on the sale.

79. Cash-to-Cash Liability Cycle

The length of time to obtain interest-free financing from suppliers in the form of accounts payable and accrued expenses.

80. Cash-to-Cash Working Capital Cycle

The timing difference between the cash-to-cash asset cycle and the cash-to-cash liability cycle.

81. CAT Bond

Bond where the interest and, possibly, the principal paid are reduced if a particular category of “catastrophic” insurance claims exceed a certain amount.

82. CD Basis

CD basis is a method that results in a higher effective yield than the bond-equivalent basis. The math works like this: using daily compounding, the effective yield would be determined by dividing the annual rate by 360, and then compounding for 365 days. [See also **Bond-equivalent basis**]

83. Central Bank

The main bank in a country responsible for issuing currency and setting and managing monetary policy.

84. Central Limit Theorem

One of the most important results in statistics, which states that the sum of independent and identically distributed random variables has a limiting distribution that is normal.

85. Certainty Equivalent

The certain return providing the same utility as the risky return of a risky portfolio in terms of cer-

tainty equivalent coefficient (α). In other words, the intercept of an indifference curve that represents the certain return is called the certainty equivalent of the portfolios on that curve and in fact is the utility value of that curve. For example, the certainty equivalent method for capital budgeting under uncertainty has used a certainty equivalent coefficient to convert the risky net cash inflow into risk-free net cash inflow in terms of certainty equivalent coefficient (α). α is

$$\alpha = \frac{\text{certain return}}{\text{risky return}},$$

where the value of α ranges from 0 to 1.

86. Certificates of Deposit

Short-term loans to commercial banks. There are active markets in CDs of 3-month, 6-month, 9-month, and 12-month maturities.

87. Certification Effect

As with any other firm commitment offer, the investment bank carries the risk of price fluctuations after the primary market transaction. As with an IPO, this should increase investors' confidence. As an outside third party, the managing investment bank has examined the issuer and found the firm worth. The bank “puts its money where its mouth is” by giving a firm commitment price and underwriting the issue. This certification effect conveys information to the marketplace that the issue is fairly priced. The investment bank is staking its reputation and profits on the attractiveness of the issuer. Investment banking firms with the highest reputations (e.g., Goldman Sachs, Merrill Lynch, and Morgan Stanley) provide the strongest certification effects with respect to security sales. The certification effect provides a signal to the financial markets regarding the quality of the issuer.

88. Certified Check

A check guaranteed by a bank where funds are immediately withdrawn.

89. Certified Financial Planner (CFP)

A designation earned by individuals who have passed the examination sponsored by the Certified Financial Planner Board. Such individuals have studied banking, investment, insurance, estate planning, and tax planning to assist in managing client financial needs.

90. Change in Net Working Capital

Difference between net working capital from one period to another. For example, the change in net working capital in 2005 is the difference between the net working capital in 2005 and 2004. The change in net working capital is usually positive in growing firms.

91. Changes in Fixed Assets

Component of cash flow that equals sales of fixed assets minus the acquisition of fixed assets. For example, when US Composite sold its power systems subsidiary in 2005 it generated \$25 in cash flow.

92. Chapter 11

Chapter 11 of the Federal Bankruptcy Reform Act of 1978 tries to allow for a planned restructuring of the corporation while providing for payments to the creditors. Chapter 11 proceedings begin when a petition is filed by the corporation or by three or more creditors. A federal judge either approves or disapproves the petition for protection under Chapter 11. During the petition period, the judge protects the managers and shareholders from the creditors and tries to negotiate a rescue plan between the shareholders and creditors. During this time, the corporation continues to do business.

Once in Chapter 11, the firm's management has 120 days to submit a reorganization plan, which usually includes debt rescheduling and the transfer of equity rights. Anyone has the right to submit

such a plan, but only very rarely does anyone but management submit a reorganization plan. The plan must secure the agreement of two-thirds of the shareholders and two-thirds of each class of creditors; for example, senior creditors whose debt is secured and junior creditors whose debt is unsecured are considered separate classes.

After the plan is approved, the judge confirms it. At this point, any payments, property sales, or securities issues or transfers of equity positions take place under the supervision of the court.

Some critics argue that Chapter 11 is flawed and needs reform because it favors shareholders over creditors and junior creditors. They claim it is unfair that shareholders and junior creditors can vote to approve the reorganization plan as equals with the senior creditors.

Also, time works against creditors in Chapter 11. Upon approval of a reorganization plan by the court, interest payments to creditors stop and legal fees begin to erode the remaining value of the firm. Often, senior creditors settle for less than their full debts simply to save time. Shareholders, on the other hand, wish to draw out the reorganization period as long as possible hoping for a turnaround; they have little or nothing left to lose.

In general, this delay is bad for the company. If a firm's managers know they can default on debts and still keep their jobs, they may tend to abuse creditors. This could cause shareholders to require larger returns on their capital and creditors to be less willing to risk their funds.

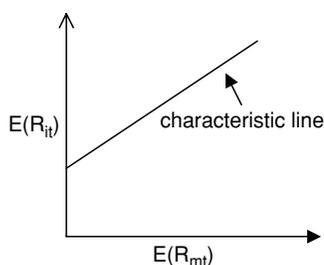
Critics have presented two basic ideas for reforming Chapter 11: (1) increase the bureaucracy, and (2) allow the market to decide. The first proposes setting time deadlines after which independent arbitrators (more bureaucracy) decide a firm's fate. This would put bankruptcy more firmly in the hands of bureaucrats. The second reform proposal involves creating opportunities for creditors and owners to sell their positions to each other or third parties at prices determined competitively in the market. This market-based solution would encourage whoever ends up with equity control to make the firm as valuable as possible.

93. Chapter 7

Chapter 7 of the Bankruptcy Reform Act of 1978 covers the **liquidation** of a firm. [See also **Liquidation**]

94. Characteristic Line

The line relating the expected return on a security, $E(R_{it})$ to different returns on the market, $E(R_{mt})$. This is a straight line plotting in the dimension with X-axis as percent in return on market, Y-axis as percent return on security. The slope of characteristic line is the beta. [See also **Market model**]



95. Charge-Off

The act of writing off a loan to its present value in recognition that the asset has decreased in value.

96. Charter

A legal document that authorizes a bank to conduct business.

97. Chartered Financial Analyst (CFA)

A designation earned by individuals who have passed a three-part examination sponsored by the Institute of Chartered Financial Analysts. Topics include economics, finance, security analysis, and financial accounting to assist in security analysis and portfolio management.

98. Chartists

Some investors, called chartists or **technicians**, examine graphs of past price movements, number of shares bought and sold, and other figures to try to predict future price movements. [See also **Technicians**]

99. Cheapest to Deliver

When a futures contract permits the seller to select the precise asset or commodity to deliver to the buyer, the cheapest to deliver is the asset that is most profitable for the shorter to deliver.

100. Check Kiting

The process of writing checks against uncollected deposits while checks are in the process of collection, thereby using funds (float) not actually available.

101. Chief Financial Officer (CFO)

In all but the smallest of firms, a top manager with the title chief financial officer (CFO) or vice president of finance usually reports to the president. Managers of two areas usually report to the CFO: the firm's **treasurer** and its **controller**. [See also **Treasurer** and **Controller**]

The CFO serves as the heir apparent for the CEO in many organizations.

102. Chinese Wall

The imaginary barrier that ensures a trust department will manage trust assets for the benefit of the trust beneficiaries, not for other departments in the bank.

103. Chooser Option

An option where the holder has the right to choose whether it is a call or a put at some point during its

life. This prespecified date is normally called the choice date. The chooser options can either be a standard simple chooser option or complex chooser option. The former refers to both call and put specified with same price and maturity time. The latter refers to call price and maturity date different from those of put option.

104. Class of Options

A class of options refers to all call and put contracts on the same underlying asset. For example, all AT&T call and put options at various exercise prices and expiration months form one class. [See also **Option class**]

105. Classic Hedge Strategy

The implicit assumption of the classic hedge ratio equal to one is that the prices of the spot commodity (in this case, the stock portfolio) and the futures contract will remain perfectly correlated over the entire hedge period. Then if the stock market does turn down as expected, as losses in the portfolio due to price declines in its composite stocks will be exactly offset by the gain on the futures position. Conversely, if stock prices rise, the portfolio's gain will be offset by equal losses on the future position. Such a strategy implies that the objective of the classic hedge is risk minimization or elimination.

106. Clean Price of Bond

The quoted price of a bond. The cash price paid for the bond (or dirty price) is calculated by adding the accrued interest to the clean price.

107. Clearing

The exchanging of checks and balancing of accounts between banks.

108. Clearing Margin

A margin posted by a member of a clearinghouse.

109. Clearinghouse

The third party of every futures contract, which guarantees that every futures contract will be carried out even if one of the parties defaults. The clearinghouse also facilitates trading of futures contracts before they are due for delivery.

110. Clearinghouse Automated Payment System (CHAPS)

The Clearinghouse Automated Payment System (CHAPS) is a large-value, electronic credit transfer system that provides same-day funds transfers for British pound payments. Located in London, the clearing network is similar to Clearinghouse Interbank Payment System (CHIPS). The 14 CHAPS members operate the system and settle balances at the end of each day through the Bank of England. CHAPS offers transfer services to other banks and customers through its 14 members.

Transfers through CHAPS are considered final; they are guaranteed, irrevocable, and unconditional. Remember, however, that this is a private system, and thus the transfers are guaranteed by the members and not by the Bank of England.

111. Clearinghouse Association

A voluntary association of banks formed to assist the daily exchange of checks among member institutions.

112. Clearinghouse Interbank Payment System (CHIPS)

The Clearinghouse Interbank Payment System (CHIPS) is a private payment-clearing system located in New York City and operated by the New York Clearinghouse Association. The network specialized in international payments denominated in US dollars. It is estimated that CHIPS transfers 90 percent of all international, interbank dollar transactions.

CHIPS tabulates transaction data for all member banks at the end of each day. The system also permits members to review payments online, that is, those in storage awaiting approval. This gives member banks better information about available funds on which to base their credit decisions. A bank officer may be more willing to grant credit knowing that CHIPS will credit a certain account later in the day.

Although the system is highly technical, CHIPS' membership, operating procedures, and efficiency have important economic implications. For one, the role of the US dollar as a world transaction currency is influenced by the relative operating efficiency and safety of its payment mechanism. Further, depending upon CHIPS' handling of failures to settle accounts, such an occurrence can be either an isolated event, or the first link in a chain reaction leading to a worldwide liquidity crisis. Last, but not least, the specific roles of individual banks in the dollar clearing system have important implications for worldwide correspondent banking relationships and, therefore, market share and profits.

113. Clientele Effect

Both federal and state governments tax dividend income at ordinary income tax rates. Any differences between capital gains and income tax rates will lead some investors to prefer one or the other for tax reasons. Another influence on dividend policy will be the composition of the firm's shareholders, commonly called its *clientele*.

Miller and Modigliani introduced the clientele effect as an imperfection of the market that affects dividend policy. M&M observed that each corporation tends to attract a specific type of clientele that favors the firm's established payout ratio. For example, investors in higher tax brackets tend to hold stocks with lower dividend payouts and higher capital gains yields. This way, they can avoid personal taxes on dividend income. On the other hand, retirees, because of their lower tax brackets, tend to invest in companies with larger yields.

Because a firm tends to attract a certain type of investor, management may be reluctant to change its dividend policy. If shareholders have to change their portfolios due to changes in payout ratios, this shift may cause shareholders to incur unwanted transaction costs. In this way, the tax differential favoring capital gains is a systematic imperfection of the market that produces a clientele effect.

114. Closed-End (mutual) Fund

A fund whose shares are traded through brokers at market prices; the fund will not redeem shares at their net asset value. The market price of the fund can differ from the net asset value. For example, a country fund such as Korean fund is a closed-end fund. In addition, REIT is also a closed end fund. [See also **REIT**]

115. CMO

[See **Collateralized mortgage obligation**]

116. Coefficient of Determination

[See **R-squared (R²)**]

117. Coefficient of Variation

One problem with using the standard deviation as a measure of risk is that we cannot get an intuitive feel for risk by looking at the standard deviation alone. Firm A's profits may have a higher standard deviation than firm B, but because firm A's mean return is much higher, firm A actually may have lower risk. The coefficient of variation allows us to make comparisons because it controls for the size of the average. The coefficient of variation (CV) measures risk-per-unit of return. The coefficient of variation is computed as the standard deviation divided by the mean as:

$$CV = \sigma / \bar{X}.$$

118. Collar

Use of options to place a cap and floor on a firm's borrowing costs. One way to do this is to sell a floor and use the premiums on the floor to pay the premium on the purchase of the cap. [See also **Interest rate collar**]

119. Collar Width

The difference between the strike prices of the two options in a collar.

120. Collateral

One way in which a bank can limit its exposure to risk is by requiring the borrower to pledge some valuable assets as collateral, that is, security for the loan. For example, a company that owns buildings, locomotives, large generating plants, or other major pieces of equipment may pledge these high-value items as security.

121. Collateral Trust Bond

A bond secured by a pledge of common stock held by the corporation.

122. Collateralized Bonds

Collateralized bonds pledge securities to protect bondholders against loss in case of default. An example of collateralized bonds are collateralized mortgage obligations (CMOs) sold by firms and agencies involved in the housing market; the CMO is backed by a pool of mortgages. Other examples of collateralized bonds include bonds backed by credit card receivables and bonds backed by car loans. The issuer pays interest and principal on such a collateralized bond over time as homeowners, credit card users, and car buyers pay off their own loans.

123. Collateralized Debt Obligation

A way of packaging credit risk. Several classes of securities are created from a portfolio of bonds and

there are rules for determining how defaults are allocated to classes.

124. Collateralized Mortgage Obligation (CMO)

A security backed by a pool of mortgage that is structured to fall within an estimated maturity range (tranche), based on the timing of allocated interest and principal payments on the underlying mortgages. A CMO services a way to mitigate or reduce prepayment risk of a real estate loan. [See also **Option-adjusted spread (OAS)**]

125. Collected Balances

Ledger balances minus float. [See also **Float**]

126. Collection Float

An increase in book cash with no immediate change in bank cash, generated by checks deposited by the firm that have not cleared [See **Float**]

127. Collection Policy

Procedures and policy followed by a firm in attempting to collect accounts receivable. It is one of the components of credit policy.

128. Collect-on-Delivery Option

An option where the premium is paid only when the option is exercised.

129. Combination

A position involving both calls and puts on the same underlying asset.

130. Combined Leverage

Operating leverage and financial leverage combine to magnify a given percentage change in sales to a

potentially much greater percentage change in earnings. Together, operating and financial leverage produce an effect called combined leverage. [See also **Degree of combined leverage**]

131. Commercial Draft

A commercial draft resembles a promissory note, but it works somewhat differently. First, the seller draws a draft ordering payment by the customer and sends this draft to the customer's bank along with any shipping documents. This commercial draft is called a *sight draft* if immediate payment is required; otherwise, it is a *time draft*, on which the customer's signature and the word *accepted* must be added. In either case, the advantage of this trade-credit instrument is that the seller obtains the buyer's formal commitment to pay before goods are delivered. This commitment is the money that the seller receives ahead of time, or the trade acceptance the buyer signs, which the bank then returns to the seller. In sum, commercial draft is a demand for payment.

132. Commercial Loan Theory

A theory suggesting that banks make only short-term, self-liquidating loans that match the maturity of bank deposits.

133. Commercial Paper

Large companies have a very attractive source of short-term funds open to them: they can sell commercial paper, unsecured promissory notes that trade in the organized money market through a number of recognized dealers. The buyers of the paper are primarily commercial banks looking for safe investments that yield higher returns than US Treasury securities. Other buyers include corporations, pension funds, insurance companies, and others that have temporary surplus funds they wish to put to work safely.

Commercial paper is sold in two ways: (1) the issuer may sell the paper directly to the buyer, or

(2) the issuer may sell the paper through a dealer firm. Firms prefer to sell directly to save the dealer's fee of approximately one-eighth of a percentage point (12.5 basis points). One hundred basis points equal 1 percent. Commercial paper is sold on a discount basis. Almost half of commercial paper is issued directly, with most of the direct paper being issued by finance companies. Approximately 75 percent of all paper (both direct and dealer issues) comes from financial companies, including commercial, savings, and mortgage banking firms, finance leasing, insurance underwriting, and other investment activities. The balance of outstanding paper is issued by nonfinancial firms, such as utilities and industrial manufacturers. This paper ordinarily is issued by a dealer.

Beside its relative low cost, commercial paper offers three advantages. First, selling the notes is a fairly simple and informal process, certainly simpler than negotiating a bank loan. While it is not as easy as using trade credit, commercial paper is the simplest of all forms of negotiated credit. Second, the ability to sell unsecured promissory notes gives the issuer a degree of prestige. This, in turn, makes it even easier to sell later issues as the company builds a name for itself in the money market. Third, a commercial paper issue may exceed the legal lending limit of most commercial banks, eliminating the need to combine banks to assemble a financing package.

At first sight, commercial paper may seem to be the obvious choice because of its lower cost, but reliance on commercial paper may be a high-risk policy. A company that finances all of its short-term needs through the sale of notes does not build up a good borrowing relationship with a bank. If economic conditions change and the money market becomes tight, such a company may well find itself in difficulties. The banks will give priority to their regular customers; they may not even have enough loanable funds to meet all the needs of their regular borrowers. The company that has relied on the money market when money was easy will have to continue to rely on it when funds are scarce, and the differential between the

interest rates of the two sources is likely to shrink dramatically in such circumstances.

In sum, Commercial paper is a short-term, unsecured promissory note issued by corporations with a high credit standing. Their maturity ranges up to 270 days.

134. Commission Broker

A broker on the floor of the exchange who executes orders for other members.

135. Commitment

A legally binding obligation (subject usually both to conditions precedent and to continuing conditions) to make available loans or other financial accommodation for a specified period; this includes revolving facilities. Even during publicly known credit distress, a commitment can be legally binding if drawn down before it is formally withdrawn for cause.

136. Commitment Fee

Fee charged for making a line of credit available to a borrower.

137. Committed Line of Credit

With the committed line of credit, the borrower pays an up-front fee which then obliges the bank to lend the firm money under the terms of the line of credit. [See also **Revolving credit agreement**]

138. Commodity Futures Trading Commission

A body that regulates trading in futures contracts in the US.

139. Commodity Spread

Offsetting long and short positions in closely related commodities. [See also **Crack spread** and **Crush spread**]

140. Commodity Swap

A swap where cash flows depend on the price of a commodity.

141. Commodity-Indexed Bonds

Several firms have issued commodity-indexed bonds with exposure to prices of commodities such as oil, gold, or silver. In a way, this technique closely resembles the tactic by which a US firm hedges its overseas risk by issuing bonds denominated in a foreign currency. An oil-drilling firm's cash flows are sensitive to the price of oil, as are the cash flows of gold-mining or silver-mining firms to the prices of those commodities. By making coupon interest and/or principal amounts vary along with the commodity price; these firms can reduce their risk of bankruptcy. Falling commodity prices reduce such a firm's cash flows, so its debt service requirements decline, as well.

142. Common Stock

Equity claims held by the "residual owners" of the firm, who are the last to receive any distribution of earnings or assets. It is usually applied to stock that has no special preference either in dividends or in bankruptcy. Owners of common stock in a corporation are referred to as shareholders or stockholders. They receive stock certificates for the shares they own. Owners of common stock are responsible for the election of the Board of Directors, appointment of Senior Officers, the selection of an auditor for the corporate financial statements, dividend policy and other matters of corporate governance.

143. Common Stock Equivalents

Because of the possible dilution in earnings per share (EPS) represented by securities that have the potential to become new shares of common stock, the EPS calculation must account for com-

mon stock equivalents (CSEs). CSEs are securities that are not common stock but are equivalent to common stock because they are likely to be converted into common stock in the future. Convertible debt, convertible preferred stock, stock rights, stock options, and stock warrants all are securities that can create new common shares and thus dilute (or reduce) the firm's earnings per share.

144. Common-Base-Year Financial Statements

To see how the ledger items change over time, we can choose a base year balance sheet or income statement and then express each item relative to the base year. Such statements are referred to as common-base-year statements.

145. Common-Size Financial Statements

Common-size financial statements include common-size balance sheets and common-size income statements. A common-size balance sheet expresses all balance sheet accounts as percentages of total assets. A common-size income statement expresses all income statement items as percentages of gross sales.

Common-size statements give an analyst insight into the structure of a firm's financial statements at a particular point in time or during a particular period. They also indicate the percentage of sales consumed by production costs or interest expenses, the proportion of assets that are liquid, or the proportion of liabilities that are short-term obligations.

146. Comparative Static Analysis for Option Pricing Model

It is a sensitive analysis of option pricing model by taking partial derivative with respect to current stock price per share, exercise price and contract period, standard deviation of rates of return, and risk-free rate. [See also **Delta, Theta, Vega, Rho, Gamma, and Greeks**]

147. Comparison Universe

The collection of money managers of similar investment style used for assessing relative performance of a portfolio manager.

148. Compensating Balances

A company's cash needs fall into three categories: (1) cash for day-to-day transactions, (2) reserve cash to meet contingencies, and (3) cash for compensating balance requirements. A compensating balance exists when a firm must keep minimum cash balance in a noninterest bearing account at a bank as a condition or a loan or bank service agreement. To determine the appropriate minimum cash balance, a financial manager simply adds together the three segments just estimated. If the cash budget projects a balance significantly higher than the minimum balance, the organization can invest the excess cash in marketable securities. On the other hand, if the cash balance falls below the desired level, the organization can plan to sell marketable securities or to borrow short-term funds. To complete the transition from a cash flow budget to a cash flow plan, the manager must adjust the cash balance to meet the minimum cash balance.

In other words, compensating balance is a deposit that the firm keeps with the bank in a low-interest or non-interest-bearing account to compensate banks for bank loans or service.

149. Competitive Bidding Issue

A competitive bidding issue occurs when a firm announces the size and terms of a proposed security sale and then solicits bids from investment banks to underwrite the issue. Once it accepts a bid, the firm proceeds with the sale just as for a firm commitment underwriting. The competition among banks may reduce the costs of floating the issue. Competitive bid underwriting involves no positive certification effect, as a bank must commit to a price before it can adequately perform its due

diligence review and investigate the issuer. Unfortunately, few firms other than US utility companies and French public companies sell seasoned equity by competitive bidding (both of these classes of firms are required by law to seek bids to float security issues).

150. Competitive Offer

Method of selecting an investment banker for a new issue by offering the securities to the underwriter bidding highest. In a competitive bid process, the issuer, usually with the assistance of a financial advisor, structures the bond issue and publishes a notice of sale requesting bids from underwriters. After the bids are received, the bonds are awarded to the underwriting syndicate that submitted the best bid (i.e., the lowest true interest cost to the issuer).

151. Complete Portfolio

The entire portfolio, including risky and risk-free assets.

152. Complex Capital Structure

A corporation that has warrants, convertibles, or options outstanding is said to have a complex capital structure. The complexity comes from the difficulty of measuring the number of shares outstanding. This is a function of a known amount of common shares currently outstanding plus an estimate of the number of shares that may be issued to satisfy the holders of warrants, convertibles, and options should they decide to exercise their rights and receive new common shares.

153. Component Analysis

It is one of the two major approaches to time-series analysis. Component analysis regards the time series as being composed of several influences or components that are generally taken to be trend-

cycle, seasonal, and random movement. The seasonal and trend movements are modeled in a deterministic manner. This kind of analysis is easier than the sample-function analysis. [See also **Sample-function analysis**]

154. Composite-Based Beta Forecasting

Lee, Newbold, Chu (1986) proposed composite-based beta forecasting method. The composite-based beta forecasting is the weighted average of the accounting based and market-based beta forecasting. [See also **Accounting-based** and **Market-based beta forecasting**]

155. Composition

Composition is a way a firm can adjust its capital sources. This method involves recomposing the debt of the firm in such a way that the creditors receive partial payment for their claims, say, 60 cents for each dollar. Creditors may find it more expedient to follow this route than to take the troubled firm to court to seek full satisfaction. In court, they would run the risk of receiving less than they would through composition. Moreover, court appearances require various legal costs, which may more than offset the possible gains achieved by going to court.

In sum, composition is a voluntary arrangement to restructure a firm's debt, under which payment is reduced.

156. Compound Interest

Interest that is earned both on the initial principal and on interest earned on the initial principal in previous periods. The interest earned in one period becomes in effect part of the principal in a following period. The longer-lasting the loan, the more important interest on interest becomes.

Future Value of an Investment: $FV = C_0(1 + r)^T$, where C_0 is the cash to be invested at date 0; r is the interest rate; and T is the number of periods over which the cash is invested.

157. Compound Option

An option that has an option on the underlying asset. There are four main types of compound options: a call on a call, a call on a put, a put on a call and a put on a put. Compound options have two strike prices and two exercise dates.

158. Compound Value

Value of a sum after investing it over one or more periods. Also called future value. [See also **Future value**]

159. Compounding

Compounding involves finding the future value of money invested today. In other words, compounding allows us to determine how money will grow over time. The future value of a cash flow (PV) invested today (PV_0) for n periods at r percent interest per period is given as:

$$FV_n = PV_0(1 + r)^n.$$

Compounding can either be discrete or continuous. [See also **Continuous compounding**]

160. Compounding Frequency

This defines how an interest rate is measured. Frequency can be daily, weekly, monthly, quarterly, annually, or continuously. [See also **Continuous compounding**]

161. Compounding Swap

This kind of option is a variation on the plain vanilla swap. Swap where interest compounds instead of being paid. In other words, the interest is compounded forward until the end of the life of the swap.

162. Concave Function

A concave function is one shaped like the cross section of an upside-down bowl. For example, a function used to describe the relationship between

yield to maturity and years to maturity is generally a concave function. This is because the yield to maturity for a long term bond is higher than that of a short-term bond.

163. Concentration Banking

One way to speed up the collection of payments from customers is through concentration banking. In such a system, customers in a particular location make their payments to a local branch office rather than to company headquarters. The branch office then deposits the checks into a local bank account. The firm can then transfer surplus funds periodically to one of the firm's principal banks, called *concentration banks*.

This system reduces mail, processing, and collection float. However, concentration banking involves some additional costs, such as higher administrative costs, compensating balances required by the local bank for its services, and the cost associated with transferring the funds from the local bank to the concentration bank.

In sum, concentration banking is the use of geographically dispersed collection centers to speed up the collection of accounts receivable.

164. Concentration Risk

Portfolio risk resulting from increased exposure to one obligor or groups of correlated (e.g., by industry or location) obligors.

165. Conditional Sales Contract

An arrangement whereby the firm retains legal ownership of the goods until the customer has completed payment. A firm uses it as a credit instrument. Conditional sales contracts usually are paid off in installments and have interest costs built into them.

166. Conditional Value at Risk (C-VaR)

Expected loss during N days conditional on being the (100-X) percent tail of the distribution of

profits/losses. The variable N is the time horizon, and X percent is the confidence level.

167. Confidence Index

The confidence index is designed to measure how willing investors are to take a chance in the market. It is the ratio of high-grade bond yields to low-grade bond yields. This ratio is started below one. When bond investors grow more confident about the economy, they shift their holdings from high-grade to lower-grade bonds, lowering their yield relative to high-grade bonds and increasing the confidence index. In other words, the confidence ratio moves close to one.

Confidence-index technicians believe that the confidence index leads the stock market by two to eleven months. An upturn in the confidence index is supposed to foretell of rising optimism and rising prices in the stock market. A fall in the confidence index represents the fact that low-grade bond yields are rising faster or falling more slowly than high-grade yields. This is supposed to reflect increasing risk aversion by institutional money managers who foresee an economic downturn and rising bankruptcies and defaults. Analysts who have examined the confidence index conclude that it conveys some information for security analysis.

168. Confirmation

Contract confirming verbal agreement between two parties to trade in the over-the-counter market.

169. Conflict between Bondholders and Stockholders

These two groups may have interest in the corporation that conflict. Sources of conflict include dividends, dilution, distortion of investment, and underinvestment. Protective covenants work to resolve these conflicts. Stockholders and bondholders have different objective functions, and this can lead to agency problems, where stockholders can expropriate wealth from bondholders.

Because the firm is interested in trying to maximize stockholders wealth, there can develop a conflict of interest between stockholders and bondholders. For instance, stockholders have an incentive to take riskier projects than bondholders do and to pay more out in dividends than bondholders would like them to. This conflict can lead to costly decisions by the firm, which lowers the total value of the firm.

170. Conglomerate Acquisition

Acquisition in which the acquired firm and the acquiring firm are not related, unlike a horizontal or a vertical acquisition. For example, the acquisition of a food-products firm by a computer firm would be considered a conglomerate acquisition.

171. Conglomerate Combination

A conglomerate combination is a type of business combination that may involve firms that have little, if any, product market similarities. A firm that is called a *conglomerate*, however, generally is one that has engaged in several conglomerate combinations.

172. Conservator

An individual or trust department appointed by a court to manage the property of an incapacitated individual.

173. Consol

Consols are bonds that never stop paying a coupon, have no final maturity date, and therefore never mature. Thus, a consol is perpetuity. British bonds are called consols. [See also **Perpetuity**]

174. Consolidated Balance Sheet

A balance sheet showing the aggregate financial condition of a firm and its subsidiaries, netting out all intracompany transactions.

175. Consolidation

Assuming there are originally two firms, Firm A and Firm B. One possible business combination results in the formation of a new firm, Firm C, which has the assets of both Firm A and Firm B. This is called a consolidation.

176. Constant Dividend Growth Model

[See **Gordon model**]

177. Constant Elasticity Variance Model (CEV)

This model allows the variance term to follow a diffusion process in which its elasticity is always constant. It will allow the variance of the rate of return to vary inversely with stock price. In Schroder (1989) shows that this kind of call option model can be defined as

$$C = (\text{current stock price per share}) \\ \times (\text{first cumulative} \\ \text{density function of noncentral } \chi^2) \\ - (\text{present value of exercise price}) \times \\ (\text{second cumulative density function} \\ \text{of noncentral } \chi^2).$$

This kind of option pricing model can be reduced to Black-Scholes option pricing model. [See also **Black-Scholes formula**]

178. Constant Growth Model

A form of the dividend discount model that assumes dividends will grow at a constant rate. [See also **Gordon model**]

179. Constant Maturity Swap (CM Swap)

A swap where a swap rate is exchanged for either a fixed rate or a floating rate on each payment date. For example, an agreement to exchange 6-month LIBOR rate for the 10-year swap rate every six months for next 6 years.

180. Constant Maturity Treasury Swap (CMT Swap)

A swap where yield on a Treasury bond is exchanged for either a fixed rate or a floating rate on each payment date. For example, agreement to exchange a LIBOR rate for Treasury rate (e.g., the 10-year treasury rate).

181. Constructive Sale

A term in tax law describing the owner of an asset entering into an offsetting position that largely eliminates the risk of holding the asset.

182. Consumer Bank

A bank that does not make commercial loans.

183. Consumer Credit

Credit granted to consumers. Trade credit is credit granted to other firms.

184. Consumption Asset

An asset held for consumption rather than investment.

185. Contingent Claim

Claim whose value is directly dependent on, or is contingent on, the value of its underlying assets. For example, the debt and equity securities issued by a firm derive their value from the total value of the firm. When the value of the firm exceeds the amount promised to the debtholders, the shareholders obtain the residual of the firm's value over the amount promised the shareholders, and the debtholders obtain the amount promised. When the value of the firm is less than the amount promised the debtholders, the shareholders receive nothing and the debtholders get the value of the firm.

186. Contingent Immunization

A mixed passive-active investment strategy that immunizes a portfolio if necessary to guarantee a minimum acceptable return but otherwise allows active management.

187. Contingent Liabilities

Items, such as guarantees or related contracts, that may become liabilities if certain developments arise.

188. Contingent Pension Liability

Under Employees Retirement Income Security Act (ERISA), the firm is liable to the plan participants for up to 30 percent of the net worth of the firm.

189. Continuous Compounding

An extreme example of frequent compounding is continuous compounding. Continuous compounding has many financial applications. These range from determining future values on bank accounts that advertise continuous compounding to topics such as the Black-Scholes option pricing model used by most option traders.

We know that $FV_n = PV_0(1 + \frac{r}{m})^{mn}$, that is, the future value (FV) of an investment today is equal to the amount invested multiplied by a future value interest factor that reflects compounded interest. Note that r is the interest rate per period; and m is the number of compounding periods each year, and n is the number of years in the investment horizon.

The future value interest factor $[(1 + r/m)^{mn}]$ rises at a decreasing rate and asymptotically approaches the continuous compounding FVIF of e^{rn} . The FVIF rises as m increases, as the effect of more frequent compounding is to raise the effective annual rate (EAR). Higher EARs result in larger future values.

In sum, continuous compounding implies that interest compounded continuously, every instant, rather than fixed intervals.

190. Continuous Discounting

The present value of interest factor (PVIF) = $[1/(1 + r/m)^{mn}]$ decreases at a decreasing rate and asymptotically approaches the continuous compounding FVIF of e^{-rn} . The PVIF falls as m increases, as the effect of more frequent compounding is to raise EAR. Higher discount rates result in lower present values. [Notation definitions see **Continuous compounding**]

191. Continuously Compounded Interest Rate

A way of quoting an interest rate such that if \$1 is invested at a continuously compounded rate of r , the payoff in one year is e^r .

192. Contract Amount

The number of units of the good or service to be delivered.

193. Contract Interest Rate

[See **Annual percentage rate**]

194. Contract Month

The month in which a futures contract is scheduled to mature by making or accepting a delivery.

195. Contract Specification

The precise definition of the good or service to be delivered in the futures contract.

196. Contracting Costs

[See **Transaction costs**]

197. Contribution Margin

Amount that each additional unit produced, such as a jet engine, contributes to after-tax profit of the

whole project: $(\text{Sales price} - \text{Variable cost}) \times (1 - T_c)$, where T_c is the corporate tax rate.

198. Control Variate Method

A technique used in Monte Carlo valuation in which simulated asset prices are used to compute two derivatives prices: the price of the derivative that is being valued, and the price of a related derivative for which the value is known. The error in valuing the derivative with a known price is used as a control for that with the unknown price.

199. Controller

The firm's controller traditionally manages accounting, cost analysis, and tax planning and usually reports to the chief financial officer (CFO).

200. Convenience Yield

A measure of the benefits from ownership of an asset that are not obtained by the holder of a long futures contract on the asset.

201. Conventional Mortgage

A mortgage or deed or trust that is not obtained under a government insured program.

202. Convergence Property

The convergence of futures prices and spot prices at the maturity of the futures contract.

203. Conversion

A risk-free position consisting of an asset, a purchased put, and a written call. For example, we can create a risk-free position by buying a stock and a put of the stock and sell the call of the stock to create a Treasury bill.

204. Conversion Factor

A factor used to determine the number of bonds that must be delivered in the Chicago Board of Trade bond futures contract. For example, the Treasury bond futures contract allows a party with the short position to choose to deliver any bond that has a maturity of more than 15 years and that is not callable within 15 years. When a particular bond is delivered, a parameter known as its *conversion factor* defines the price received by the party with the short position.

205. Conversion Fee

Fee charged for converting a loan commitment to a term loan.

206. Conversion Premium

Difference between the conversion price and the current stock price divided by the current stock price. [See also **Conversion price**]

207. Conversion Price

The conversion price, in general, equals

$$\text{Conversion price} = \frac{\text{Par value of bond}}{\text{Conversion ratio}}$$

It implies that the amount of par value exchangeable for one share of common stock.

208. Conversion Ratio

The number of shares per \$1,000 bond (or debenture) that a bondholder would receive if the bond were converted into shares of stock. [See also **Convertible bonds**]

209. Conversion Value

What a convertible bond would be worth if it were immediately converted into the common stock at the current price. [See also **Convertible bonds**]

210. Convertible Bonds

Convertible bonds may vary the amount of money the bondholder ultimately receives. A convertible bond can be converted, as the investor's option, into a specified number of shares of the issuer's common stock (defined as the bond's **conversion ratio**). The conversion ratio is set to make conversion unattractive initially. If the firm meets with success, however, its stock price will rise, and the bond's price will be affected by its **conversion value** (the stock price times the conversion ratio) rather than just its value as a straight bond.

211. Convertible Debt

A bond that may be exchanged for common stock in the same firm. [See also **Common stock**]

212. Convertible Risk

The variability of return caused when one type of security is converted into another type of security. If a bond or a preferred stock is convertible into a stated number of shares of common stock of the corporation issuing the original security, the rate of return of the investment may vary because the value of the underlying common stock has increased or decreased. A convertible security normally has a lower coupon rate, or stated dividend (in the case of preferred stocks), because investors are willing to accept a lower contractual return from the company in order to be able to share in any rise in the price of the firm's common stock.

213. Convertible Securities

A convertible security is a bond or preferred stock issue that typically gives its holder the right to exchange it for a stipulated number of shares of common stock of the issuing corporation during a specified period of time. Therefore, convertible bonds and convertible preferred stock represent options to the security holder. If the price of common stock rises sufficiently, holders of these secur-

ities will find it profitable to exercise their conversion rights. As for a warrant, such a right will have some positive value in the market, so the market will accept a lower coupon rate on the corporation's convertible bonds than it would demand for a bond with no conversion privilege.

Convertible bonds are especially attractive when management prefers to raise capital by issuing equity rather than debt, but believes that transient influences have led the market to temporarily undervalue its common stock. [See also **Convertible bonds**] If this perception is correct, the stock price will rise and, as a result, debt will be converted to equity. A convertible bond issue may offer an advantage over a bond issue with warrants since managers can predict how much capital the issue will raise.

The exercise of a warrant raises further capital for the firm; conversion simply substitutes equity for debt. The conversion of a bond issue for common stock does not raise new capital, but it does implicitly increase cash flow if the conversion occurs prior to the bond's maturity date, by reducing future coupon payments.

A further distinction between warrants and convertible bonds is that warrants are not callable, while the issuer generally can call a convertible bond. The bondholder can be offered the option of converting it within a short time period or surrendering it at a specific cash price. As with all callable bonds, investors demand higher returns for callable, convertible securities. Firms are willing to pay this higher price in exchange for management flexibility.

We have seen why a corporation might want to issue a hybrid security rather than straight debt and/or equity. What about the investor? These securities may be particularly attractive when investors have trouble assessing the riskiness of a corporation's future business activities. If the corporation embarks on a high-risk enterprise, holders of straight bonds will be in the unappealing position of gaining nothing if the enterprise succeeds and facing greatly increased default risk if it fails.

Warrants or conversion privileges can restore some balance. By exercising a warrant or converting a bond to stock, the bondholder can share in any success resulting from a risky venture. This reduces the importance of assessing the future business risk of a corporation's activities.

214. Convex

Convex shaped like the cross section of a bowl. Convex with shapes such that of price-yield relationship are said to be convex and curvature of the price yield curve is called the convexity of the bond.

215. Convexity

The second derivative of a bond's price with respect to a change in the interest rate, divided by the bond price. In other words, it refers to the degree of curvature of the price-yield curve around some interest level. [See also **Convex**]

216. Convexity Adjustment

There are two possible meanings for this term: (1) it refers to the adjustment necessary to convert a futures interest rate to a forward interest rate. The difference between the expected bond yield and the forward bond yield is known as convexity adjustment. (2) it can also refer to the adjustment to a forward rate that is sometimes necessary when Black's model is used. [See also **Black's model**]

217. Copula Function

A copula function is simply a specification of how the univariate marginal distributions combine to form a multivariate distribution. For example, if we have N -correlated uniform random variables, U_1, U_2, \dots, U_N , then

$$C(u_1, u_2, \dots, u_N) = \mathbf{P}_r\{U_1 < u_1, U_2 < u_2, \dots, U_N < u_N\}$$

is the joint distribution function that gives the probability that all of the uniforms are in the specified range.

In a similar manner, we can define the Copula function for the default times of N assets

$$C(F_1(T_1), F_2(T_2), \dots, F_N(T_N)) = \mathbf{P}_r\{U_1 < F_1(T_1), U_2 < F_2(T_2), \dots, U_N < F_N(T_N)\},$$

where $F_i(T_i) = \mathbf{P}_r\{t_i < t\}$.

Li (2000) has shown that how copula function can be used to estimate default correlation. [See also **Default correlation**]

218. Core Capital

Tier 1 capital consisting primarily of stockholder's equity.

219. Core Deposits

A base level of deposits a bank expects to remain on deposit, regardless of the economic environment.

220. Corporate Bonds

Long-term debt issued by private corporations typically paying semiannual coupons and returning the face value of the bond at maturity.

221. Corporate Leverage

Corporate leverage is used to refer to the debt floated by the corporation.

222. Corporations

Proprietorships are the most numerous form of business organization, but in terms of market value, corporations are the dominant form. A corporation is a legal person in the eyes of the law, separate in concept from its owners and managers. As a person, it has rights, duties, privileges, and obligations.

The corporate organizational form has several advantages. As a separate legal entity, its life does not depend on that of its owners. Unlike a proprietorship or partnership, the death of a shareholder does not force the corporation to stop doing business. Shares of ownership in the corporation, especially those listed on stock exchanges such as the New York Stock Exchange, can be traded at easily discernible prices. Issuing shares gives a corporation access to much larger pools of capital than a partnership or proprietorship. As a legal entity, it can borrow money in its own name. Also, as owners of a corporation have limited liability, the most they can lose is their investment.

A major disadvantage of the corporate organizational form is the taxation of earnings. Depending upon the income level, corporate income may be taxed at higher rates than proprietor or partnership income. In addition, corporate dividends are taxed twice. As corporations pay dividends from after-tax earnings, they represent funds that have been taxed once at the corporate level. Investors then pay taxes on these dividends again, as part of their personal income.

Two special forms of corporate organization in the US allow dividends to escape double taxation. [See also **Subchapter S corporation** and **Limited liability company**]

Many countries' laws recognize the corporate form of organization. US corporations may use the suffixes "Inc." or "Corp." to designate themselves. British corporations use the suffix "PLC," for *public limited company*, in which *limited* refers to shareholders' liability in the firm. The suffix "AG" following the same names of firms in Germany, Austria, Switzerland, or Liechtenstein is an abbreviation for *Aktiengesellschaft*, which means *corporation*. Some countries allow corporations to sell bearer shares, which allow the owners to remain anonymous. A history of social upheavals, wars, and high taxation in Europe led to the evolution of bearer shares to allow owners to remain anonymous and thus escape taxation from their governments or identification if their governments were overthrown. Suffixes of "NV" (*Naamioze*

Venootschap) in the Netherlands and "SA" (*Societe Anonyme*) in France and Belgium designate such firms.

In sum, a corporation is one type of business organization that is created as a distinct "legal person" composed of one or more actual individuals or legal entities, primary advantages of a corporation include limited liability, ease of ownership, transfer, and perpetual succession.

223. Correlation

Correlation is a statistical concept that relates movements in one set of variables to movements in another. **Covariance** can indicate a positive, zero, or negative relationship between two variables, but little else. [See also **Covariance**] Correlation, however, shows the *strength* of the linear relationship between two sets of variables. The correlation coefficient between two set of numbers, denoted by the small Greek letter rho (ρ), is computed as:

$$\rho_{12} = \frac{\text{cov}(R_1, R_2)}{\sigma_1 \sigma_2},$$

where σ_1 and σ_2 are the standard deviations of the two number series. Mathematically, the correlation will always lie between -1.0 and $+1.0$, inclusively. As correlation approaches $+1.0$, it indicates a stronger *positive* linear relationship between the two series of numbers. As the correlation approaches -1.0 , it indicates a stronger *negative* linear relationship between the two series. The greatest reduction in risk occurs when two strongly negatively correlated assets are placed in the same portfolio. Correlations close to zero represent weak linear relationship; a correlation of zero implies that no linear relationship exists.

224. Correlation Coefficient

A statistic in which the covariance is scaled to a value between minus one (perfect negative correl-

ation) and plus one (perfect positive correlation). [See also **Correlation**]

225. Correspondent Bank

A bank that provides services, typically check clearing, to other banks.

226. Cost of Carry

The interest cost of owning an asset, less lease or dividend payments received as a result of ownership; the net cash flow resulting from borrowing to buy an asset.

227. Cost of Common Equity

Unlike debt and preferred stock, cash flows from common equity are not fixed or known beforehand, and their risk is harder to evaluate. In addition, firms have *two* sources of common equity – retained earnings and new stock issues – and thus *two* costs of common equity. It may be clear that there is an explicit cost (i.e., dividends and flotation costs) associated with issuing new common equity. But while the firm pays no extra dividends or flotation costs to use retained earnings, their use is not free; we must consider the opportunity cost of using money that could have been distributed to shareholders.

Retained earnings represent the portion of net income that the firm does not distribute as dividends. From the shareholders' perspective, the opportunity cost of retained earnings is the return the shareholders could earn by investing the funds in assets whose risk is similar to that of the firm. To maximize shareholder wealth, management must recognize that retained earnings have a cost. That cost, k_{re} , is the return that shareholders expect from their investment in the firm.

228. Cost of Debt

The firm's unadjusted cost of debt financing equals the yield to maturity (YTM) on new debt, either a long-term bank loan or a bond issue. The yield to

maturity represents the effective annual rate or cost to the firm of borrowing funds in the current market environment. Coupon rates from previously issued bonds reveal little about the firm's present financing costs. The firm's *current* financing costs determine its current cost of capital.

A firm can determine its cost of debt by several methods. If the firm targets an "A" rating (or any other bond rating), a review of the yields to maturity on A-rated bonds can provide an estimate of the firm's current unadjusted borrowing costs. Several additional factors will affect the firm's specific borrowing costs, including covenants and features of the proposed bond issue as well as the number of years until the bond or loan matures or comes due. It is important to examine bonds whose ratings and characteristics resemble those the firm wants to match.

In addition, the firm can solicit the advice of investment bankers on the cost of issuing new debt. Or, if the firm has debt currently trading, it can use public market prices and yields to estimate its current cost of debt. The publicly traded bond's yield to maturity can be found using the techniques for determining the return on an investment. Finally, a firm can seek long-term debt financing from a bank or a consortium of banks. Preliminary discussions with the bankers will indicate a ballpark interest rate the firm can expect to pay on the amount it borrows. [For calculation of YTM see **Yield to maturity**]

229. Cost of Equity Capital

The required return on the company's common stock in capital markets. It is also called the equity holders' required rate of return because it is what equity holders can expect to obtain in the capital market. It is a cost from the firm's perspective. [See also **Cost of common equity**]

230. Cotango

An increment added to a futures price to cover the carrying costs until delivery occurs at the schedule

settlement date (also called Forwardation). Therefore, the futures price must exceed the expected future spot price.

231. Counterparties

The buyer and seller of a derivative such as swap are counterparties. Usually, not always, a financial institution serves as an intermediary between the counterparties. When bank and the company agree on an at-the-money forward exchange contract or swap, the company is at risk if the bank fails, just as much as the bank is at risk if the counterparty fails. After inception, swap positions often move in/out-of-the-money and the relative credit risk changes accordingly. [See also **Interest rate swap**]

232. Country Risk

The credit risk that government or private borrowers in a specific country will refuse to repay their debts as obligated for other than pure economic reasons. For example, the repayments from foreign borrowers may be interrupted because of interference from foreign government.

233. Country Selection

A type of active international management that measures the contribution to performance attributable to investing in the better-performing stock markets of the world.

234. Coupon

The stated interest on a debt instrument. In bonds, notes, or other fixed income securities, the stated percentage rate of interest, usually paid twice a year.

235. Coupon Bond

A security that obligates the issuer to make interest payments called coupon payments over the life of the bond, then to repay the face value at maturity.

236. Coupon Interest Rate (Coupon Rate)

The coupon interest rate is the percentage of the par value to be paid annually, as interest, to the bond holder.

237. Coupon-reinvestment Risk

It is the expected yield calculated by assuming that all coupon cash flows would be reinvested at the same yield that exists at the time of purchase. If rates began to fall, it would be impossible to reinvest the coupon at a rate high enough to produce the anticipated yield. If rates increase, the coupon cash flow will be reinvested at higher rates and produce a return above expectation.

238. Covariance

Covariance is a statistical concept that relates movements in one set of variables to movements in another. For example, the covariance between two sets of returns, R_1 and R_2 , is

$$\text{cov}(R_1, R_2) = \sum_{t=1}^N \left(\frac{(R_{1t} - \bar{R}_1)(R_{2t} - \bar{R}_2)}{N - 1} \right),$$

where N represents the number of joint observations of the assets' returns; R_{1t} and R_{2t} represent the t th observations of R_1 and R_2 ; and \bar{R}_1 and \bar{R}_2 represent the average returns on the two assets.

A negative covariance produces a situation where when one set of returns is rising, the other is usually falling, and vice versa. A zero covariance means that the two time series have no linear relationship.

Covariance can indicate a positive, zero, or negative relationship between two variables but little else. To look at the *strength* of the linear relationship between two sets of variables we look at the **correlation**. [See also **Correlation**]

239. Covenants

A bond indenture may include covenants, which can impose restrictions or extra duties on the firm.

Covenants are most effective when they are specific measures that state the acceptable limits for change in the obligor's financial and overall condition. They clearly define what is meant by "significant" deterioration in the obligor's credit quality. Financial covenants are more explicit (and therefore more desirable) than a "material adverse change" clause. Cross default provisions are common: allowing acceleration of debt repayment. These provisions affect the credit rating of the issue and the firm's financing costs. Restrictive covenants designed to protect bondholders and maintain the value of their investment can reduce the issuer's financing costs. The firm must decide if the restrictions and duties are worth the access to lower cost funds. The trustee ensures that the issuer observes any bond covenants. If the issuer violates a covenant, the issue is technically in default and the trustee can pursue a legal remedy, including immediate redemption of the bondholders' principal, in court.

Covenants are an example of a mechanism to control bondholder-firm agency problems. The covenants help ensure that management's actions do not unduly jeopardize the firm's liquidity and the bondholders' security. Examples of covenants include stipulations that the firm must maintain a minimum level of net working capital, maintain a minimum interest coverage ratio, keep pledged assets in good working order, and send audited financial statements to bondholders. Other examples include restrictions on the amount of the firm's debt, its dividend payments, and asset sales.

240. Coverage Ratios

Ratios of company earnings to fixed costs. Low or falling coverage ratios signal possible cash flow difficulties. [See also **Interest coverage ratio**]

241. Covered Call

Covered call is a long position in an asset together with a written call on the same asset. Covered calls are far less risky than naked calls, because the

worst can happen is that the investor is required to sell shares already owned at a below their market value.

242. Covered Interest Arbitrage

A zero-investment strategy with simultaneous borrowing in one currency, lending in another, and entering into a forward contract to guarantee the exchange rate when the loans mature.

243. Covered Write

A long position in an asset coupled with sale of a call option on the same asset.

244. Crack Spread

Crude oil is generally refined to make petroleum products, in particular heating oil and gasoline. The split of oil into heating oil and gasoline can be complemented by a process known as "cracking." Hence, the difference between the price of crude oil futures and that of equivalent amounts of heating oil and gasoline is known as crack spread.

245. Credit Bureau

An association that collects and provides information on the credit (payment) histories of borrowers.

246. Credit Check

Efforts by a lender to verify the accuracy of information provided by potential borrowers.

247. Credit Department

The bank department where credit information is collected and analyzed to make credit decisions.

248. Credit Derivatives

A claim where the payoff depends upon the credit rating or default status of a firm. These include

credit options, credit swaps, credit forwards and others.

249. Credit Enhancement

A guarantee or letter of credit backing for a loan which improves the creditworthiness of the contract.

250. Credit Exposure

The amount subject to changes in value upon a change in credit quality through either a market based revaluation on the event of an up (down) grade or the application of a recovery fraction in the event of default.

251. Credit File

Information related to a borrower's loan request, including application, record of past performance, loan documentation, and analyst opinions.

252. Credit Instrument

Device by which a firm offers credit, such as an invoice, a promissory note, or a conditional sales contract.

253. Credit Limit

The maximum amount that a borrower is allowed to borrow against a loan commitment or credit line.

254. Credit Period

Time allowed a credit purchaser to remit the full payment for credit purchases. Credit periods vary among different industries. For example, a jewelry store may sell diamond engagement rings for 5/30, net 4 months (the company require final payment within 4 months but offer a 5 percent discount to customers who pay within 30 days). A food wholesaler, selling fresh fruit and produce, might use net 7 months. Generally, a firm must consider three

factors in setting a credit period. (1) the probability that the customer will not pay. A firm whose customers are in high-risk businesses may find itself offering restrictive credit terms. (2) the size of the account. If the account is small, the credit period will be shorter. Small accounts are more costly to manage, and small customers are less important. (3) the extent to which the goods are perishable. If the collateral values of the goods are low and cannot be sustained for long periods, less credit will be granted.

255. Credit Quality

Generally meant to refer to an obligor's relative chance of default, usually expressed in alphabetic terms (e.g., Aaa, Aa, A, etc.). In credit metrics analysis, the credit quality includes also the volatility of up (down) grades.

256. Credit Rating

A measure of the creditworthiness of a bond issue. In addition to bond credit rating, there is a growing trend toward the "credit rating" of loans offered for sale. Unlike bonds, a loan credit rating reflects more than the financial soundness of the underlying borrowing corporation. In particular, the value of the underlying collateral can change a loan's credit rating up to one full category above a standard bond rating. As more loans are rated, their attractiveness to secondary market buyers is likely to increase.

257. Credit Ratings Transition Matrix

A table showing the probability that a company will move from one credit rating to another during a certain period of time.

258. Credit Risk

The cash flows to be received by bond market investors are not certain; like individuals, corporate debtors may pay interest payments late or not

at all. They may fail to repay principal at maturity. To compensate investors for this credit or **default risk**, rates of return on corporate bonds are higher than those on government securities with the same terms of maturity. Government securities are presumed to be free of credit risk. Generally, as investors perceive a higher likelihood of default, they demand higher default-risk premiums. Since perceptions of a bond's default risk may change over its term, the bond's yield to maturity also may change, even if all else remains constant.

259. Credit Scoring

The use of a statistical model based on applicant attributes to assess whether a loan automatically meets minimum credit standards. The model assigns values to potential borrowers' attributes, with the sum of the values compared to a threshold. More specifically, this is a reference to the application of linear discriminant analysis to combine financial ratios to quantitatively predict the relative chance of default. [See also **Credit scoring model**]

260. Credit Scoring Model

Using financial ratio analysis to evaluate credit risk is certainly helpful. Yet, the decision that must be made following the examination of such data can be complicated by the difficulty of interpreting conflicting ratios. Different ratios often imply different predictions for the same firm. To overcome such ambiguity, information from several financial ratios can be combined into a single index. The resulting multivariate financial model will yield a single number for classifying the firm in terms of credit risk. For example, the multivariate financial model developed by Altman (1968) is defined as:

$$Y_i = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5,$$

where X_1 = Working capital/Total assets; X_2 = Retained earnings/Total assets; X_3 = EBIT/Total

assets; X_4 = Market value of equity/Book value of total debt; and X_5 = Sales/Total assets.

By substituting the financial ratio information for an individual company into this model, we can obtain financial Z -scores. This financial Z -score can be used to determine financial condition of a firm.

261. Credit Sensitive Notes

The coupon rates on credit sensitive notes increase (or decrease) if the issuer's bond rating falls (or rises). This compensates investors for changes in the issuer's credit quality over the life of the note.

262. Credit Spread Option

Option whose payoff depends on the spread between the yields earned on two assets. Options can be written on many spread: bond spreads, credit default swap spreads, and asset swap spreads.

263. Credit Union

A non-profit organization that offers financial services to qualifying members. Credit unions do not pay state and federal income taxes and thus operate at a competitive advantage to other depository institutions.

264. Credit Value at Risk

The credit loss that will not be exceeded at some specified confidence level. [See also **Value at risk**]

265. Credit-Linked Notes (CLNs)

Bonds that have payments determined at least in part by credit events (e.g., default) at a different firm. These also refer to asset-backed securities which were issued against the loan portfolio.

Credit-linked notes exist in a number of forms, but all of them contain a link between the return

they pay and the credit-related performance of the underlying asset. A standard CLN is a security, usually issued by an investment-graded entity that has an interest payment and fixed maturity structure similar to a vanilla bond. The performance of the CLN, however, including the maturity value, is linked to the performance of a specified underlying asset or assets as well as that of the issuing entity. CLNs are usually issued at par. They are often used as a financing vehicle by borrowers in order to hedge against credit risk; CLNs are purchased by investors to enhance the yield received on their holdings. Hence, the issuer of the CLN is the protection buyer and the buyer of the note is the protection seller.

266. CreditMetrics Model

CreditMetrics was introduced in 1997 by J.P. Morgan and its co-sponsors (Bank of America, Union Bank of Switzerland) as a value at risk (VAR) framework to apply to the valuation and risk of nontradable assets such as loans and privately placed bonds. Thus, while RiskMetrics seeks to answer the question, “If tomorrow is a bad day, how much will I lose on tradable assets such as stocks and bonds?” CreditMetrics asks, “If next year is a bad year, how will I lose on my loans and loan portfolio?”

267. Creditor

Person or institution that holds the debt issued by a firm or individual. Bond holder is the creditor, creditors do not usually have voting power. The device used by creditors to protect themselves is the loan contracts (that is the indenture).

268. Creditors' Committee

A method of adjusting a capital structure without bankruptcy proceedings involves the operation of the enterprise by a group of creditors, called a creditors' committee. These representatives manage the firm until it gathers sufficient liquid capital

to satisfy existing claims or until an acceptable composition is found.

There is no legal compulsion for any creditor to accept an out-of-court adjustment. Any creditor can delay the process if it is dissatisfied with a proposal by the majority (or minority) of creditors to relieve the financial burden on the firm. The unhappy creditor can refuse the arrangement and insist that a claim be met in full; if it is not, the creditor can take the firm to court to be liquidated or reorganized.

269. Cross Rate

An exchange rate may be quoted as a cross-rate, the rate of a non-US dollar currency expressed in terms of another non-US dollar currency.

270. Cross Hedge

Use of a futures contract for a specific asset that differs from the cash asset being hedged. For example, to use index futures to hedge 10-year US government bond. For example IBM hold stocks of GM.

271. Cross Holdings

One corporation holds shares in another firm.

272. Cross-Sectional Analysis

Financial ratios can be used in *cross-sectional analysis*, in which different firms are compared at the same point in time. The best information source for cross-sectional analysis of firm ratios is the firm's financial statements and their footnotes. These materials appear in annual reports as well as 10-Q and 10-K filing with the Securities and Exchange Commission.

273. Crown Jewels

An anti-takeover tactic in which major assets – the crown jewels – are sold by a firm when faced with a

takeover threat. This is sometimes referred to as the scorched earth strategy.

274. Crush Spread

Soybean generally can be crushed to produce soybean meal and soybean oil. Therefore, the difference between the price of a quantity of soybeans and that of the soybean meal and oil that can be produced by those soybeans.

275. Cum Dividend

With dividend before the ex-dividend date the stock is said to trade cum dividend.

276. Cumulative Abnormal Return (CAR)

Sum of differences between the expected return on a stock and the actual return that comes from the release of news to the market. The abnormal return on a given stock for a particular day can be calculated by subtracting the market's return (R_m) on the same day – as measured by a broad based index such as the S&P composite index – from the actual return (R) on the stock for the day. $AR = R - R_m$. Cumulative abnormal return (CAR) is the total abnormal return for the period surrounding an announcement on the release of information. The CAR generally can be measured by cumulative average residual. [See also **Cumulative average residual**]

277. Cumulative Average Residual (CAR)

Following Fama, Fisher, Jensen and Roll (1969), the cumulative average residual (CAR) can be defined as:

$$CAR = \sum_{t=1}^T AR_t,$$

$$\text{where } AR_t = \frac{1}{N} \sum_{j=1}^N e_{jt};$$

$$e_{jt} = R_{jt} - \beta_j R_{mt};$$

R_{jt} = rate of return for security j in period t ; β_j = beta coefficient for j th security; R_{mt} = market rate of return in period t ; T = the number of months being summed ($T = 1, 2, \dots, m$); and N = the total number of months in the sample.

278. Cumulative Distribution Function

A function giving the probability that a value drawn from a distribution will be less than or equal to some specified value.

279. Cumulative Dividend

Dividend on preferred stock that takes priority over dividend payments on common stock. Dividends may not be paid on the common stock until all past dividends on the preferred stock have been paid.

280. Cumulative Normal Distribution Function

The cumulative distribution function for the normal distribution; $N(x)$ in the Black-Scholes equation. [See **Black-Scholes option pricing model**]

281. Cumulative Probability

The probability that a drawing from the standardized normal distribution will be below a particular value. For example, the probability for a standardized normal distribution that a drawing will be below 0 is clearly 50 percent because the normal distribution is symmetric. Using statistical terminology, we say that the cumulative probability of 0 is 50 percent. Statisticians also say that $N(0) = 50$ percent.

282. Cumulative Voting

A procedure whereby a share holder may cast all of his or her votes for one member of the board of directors. The effect of cumulative voting is to permit minority participation. If cumulative voting is permitted. The total number of votes that each

shareholder may cast is determined first. The number is calculated as the number of shares (owned or controlled) multiplied by the number of directors to be elected. Each shareholder can distribute these votes as he or she wishes over one or more candidates.

283. Currency Risk

It is also called exchange-rate risk. Securities denominated in a currency other than the currency used by the purchaser have this additional risk. The total return an investor receives will equal the stock return times the change in the currency the security is denominated in relative to the investor's domestic currency.

Total return = Security return \times Change in relative exchange rate.

284. Currency Selection

Asset allocation in which the investor chooses among investments denominated in different currencies.

285. Currency Swap

In a currency swap, two firms agree to exchange an equivalent amount of two different currencies for a specified period of time. A fixed rate is paid in one currency while a floating rate is paid in another. Currency swap is generally used to hedge the currency interest rate risk.

As an example of a typical currency swap, suppose a German company would like to borrow US dollars to finance a foreign investment, but the firm is not known outside Germany. Similarly, a US firm needs DMs for its German subsidiary, but the cost of borrowing in the US is cheaper than the cost of borrowing in Germany for this firm. Both firms face a similar problem. They can borrow at favorable rates, but not in the desired currency. In this case, a currency swap presents on solution. A bank acting as an intermediary can bring these two firms together and arrange a swap of deutsche

marks for dollars. The German firm agrees to pay the US company principal and interest on its dollar borrowings in the Untied States, while the US firm agrees to pay the costs of the DM borrowings for its German subsidiaries. Each firm thus obtains the best possible rate and eliminates exposure to exchange rate changes by agreeing to exchange currencies.

286. Currency-Translated Index

An investment in an index denominated in a foreign currency, where the buyer bears both currency and asset risk.

287. Current Account

The difference between imports and exports, including merchandise, services, and transfers such as foreign aid.

288. Current Asset

Asset that is in the form of cash or that is expected to be converted into cash in the next 12 months, such as inventory. Current assets are presented in the balance sheet in order of their accounting liquidity, that is, the ease with which they can be converted to cash at a fair price and the time it takes to do so.

289. Current Exposure

For market-driven instruments, the amount it would cost to replace a transaction today should counterparty default. If there is an enforceable netting agreement with the counterparty, then the current exposure would be the net replacement cost; otherwise, it would be the gross amount. [See also **Exposure**]

290. Current Liabilities

Obligations that are expected to require cash payment within one year or the operating period,

whichever is shorter. The three major items found as current liabilities are account payable; accrued wages; and other expenses payable; and note payable. Also, on the balance sheet, Net working capital = cash + other current assets – current liabilities.

291. Current Ratio

Total current assets divided by total current liabilities, used to measure short-term solvency of a firm. [See also **Liquidity ratios**]

292. Current Yield

A bond's annual coupon payment divided by its price. Differs from yield to maturity.

293. Customer Information File

A record of the services used by each customer.

294. Customer Profitability Analysis

A procedure that compares revenues with expenses and the bank's target profit from a customer's total account relationship.

295. Cyclical Liquidity Needs

An estimate of liquid funds needed to cover deposit outflows or loan demand in excess of trend or seasonal factors.