A

1. Abnormal Return

Return on a stock beyond what would be the expected return that is predicted by market movements alone. [See also **Cumulative abnormal return (CAR)**]

2. Absolute Cost Advantage

Absolute cost advantages can place competitors at a cost disadvantage, even if the scale of operations is similar for both firms. Such cost advantages can arise from an advanced position along the learning curve, where average costs decline as cumulative output rises over time. This differs from economies of scale, which involves the relationship between average costs and the output level per period of time. A firm that enters a market segment early can learn about the production and distribution process first and make more efficient use of assets, technology, raw inputs, and personnel than its competitors. In such cases, the firm can frequently reduce costs and prices and maintain market leadership. Similar advantages can result from possessing proprietary technology that is protected by patents.

Some firms seek to maintain absolute cost advantages by entering foreign market. Early entry can allow the firm to gain experience over its competitors, as it can more efficiently track foreign market trends and technologies and disseminate new methods throughout the firm.

3. Absolute Priority of Claims

In case of liquidation of a firm's assets, the rule requires satisfaction of certain claims prior to the satisfaction of other claims. The priority of claims in liquidation or reorganization typically takes the following order:

1. Special current debt, which includes trustee expenses, unpaid wages that employees have earned in the 90 days preceding bankruptcy (not to exceed $2,000 for any one case), and contributions to employee benefit plans that have fallen due within the 180 days preceding bankruptcy.
2. Consumer claims on deposits not exceeding $900 per claim.
3. Tax claims.
4. Secured creditors' claims, such as mortgage bonds and collateral trust bonds, but only to the extent of the liquidating value of the pledged assets.
5. General creditors' claims, including amounts owed to unsatisfied secured creditors and all unsecured creditors, but only to the extent of their proportionate interests in the aggregate claims of their classes.
6. Preferred stockholders' claims, to the extent provided in their contracts, plus unpaid dividends.
7. Residual claims of common stockholders.

The priority of claims order and amounts are arbitrary, and no conclusions should be drawn about the relative merits of how workers, consumers, the government, creditors, and owners are treated.

4. Absolute Priority Rule (APR)

Establishes priority of claims under liquidation. Once the corporation is determined to be bankrupt, liquidation takes place. The distribution of the proceeds of the liquidation occurs according to the following priority: (1) Administration expenses; (2) Unsecured claims arising after the filing of an involuntary bankruptcy petition; (3) Wages, salaries, and commissions; (4) Contributions to employee benefit plans arising within 180 days before the filing date; (5) Consumer claims; (6) Tax claims; (7) Secured and unsecured creditors' claims; (8) Preferred stockholders' claims; (9)

Common stockholders' claims. APR is similar to absolute priority of claims.

5. Absolute Purchasing Power Parity

Absolute purchasing power parity states that exchange rates should adjust to keep purchasing power constant across currencies. In general, however, absolute purchasing power parity does not hold, in part because of transportation costs, tariffs, quotas, and other free trade restrictions. A more useful offshoot of absolute purchasing power parity is **relative purchasing power parity**. [See also **Relative purchasing power parity**]

6. Accelerated Cost Recovery System (ACRS)

A system used to depreciate accelerated assets for tax purposes. The current system, enacted by the 1986 Tax Reform Act, is very similar to ACRS established in 1981. The current modified accelerated cost recovery system (MACRS) specifies the depreciable lives (recovery periods) and rates for each of several classes of property. It should be noted that this higher level of depreciation is offset by reclassifying individual assets into categories with longer life. [See also **Modified accelerated cost recovery system**]

7. Accelerated Depreciation

A method of computing depreciation deductions for income tax that permits deductions in early years greater than those under straight line depreciation. It includes sums of year's digits, units of production and double decline methods. [See also **Double-declining balance depreciation, Sum-of-the-year's-digits depreciation** and **Unit of production method**]

8. Account Activity

Transactions associated with a deposit account, including home debits, transit checks, deposits, and account maintenance.

9. Account Analysis

An analytical procedure for determining whether a customer's deposit account or entire credit-deposit relationship with a bank is profitable. The procedure compares revenues from the account with the cost of providing services.

10. Account Executive

A representative of a brokerage firm who processes orders to buy and sell stocks, options, etc., for a customer's account.

11. Account Maintenance

The overhead cost associated with collecting information and mailing periodic statements to depositors.

12. Accounting Analytic

The use of financial ratios and fundamental analysis to estimate firm specific credit quality examining items such as leverage and coverage measures, with an evaluation of the level and stability of earnings and cash flows. [See also **Credit scoring model**]

13. Accounting Beta

Project betas can be estimated based on accounting beta. Accounting measures of return, such as EBIT/Total Assets, can be regressed against a profitability index that is based on data for the stocks in the S&P 500 or some other market index:

$$\left[\frac{EBIT}{TA}\right]_{project,\,i,\,t} = \alpha_i + A\beta_i\left[\frac{EBIT}{TA}\right]_{market,\,t} + \varepsilon_{i,\,t},$$

where the slope estimate; $A\beta_i$, is the accounting beta.

Accounting information by product line or division is available in various Securities and Exchange Commission (SEC) filings that are

required of publicly traded firms. Although a firm's multidivisional structure may disqualify it from being a pure play comparable, it may include divisional data in its public SEC filing that would be useful for estimating an accounting beta.

14. Accounting Break-Even

Accounting break-even occurs when accounting revenues equal accounting expenses so that pretax income (and hence net income) equals zero. It tells us how much product must be sold so that the firm's overall accounting profits are equal to accounting expenses. Ignoring working capital effects,

$$OCF = NI + Depreciation.$$

At accounting break-even, net income (NI) is zero, so Operating Cash Flow (OCF) equals the periodic depreciation expense. Substituting this into the general break-even (Q^*) formula, we obtain accounting break-even quantity ($Q_{accounting}{}^*$) as:

$$Q^*_{accounting} = \frac{FC + Dep}{p - vc},$$

where FC = fixed cost; vc = variable cost per unit; p = price per unit; and Dep = depreciation.

The denominator, (p–vc), is called the contribution margin. The accounting break-even quantity is given by the sum of the fixed cost and depreciation divided by the contribution margin. Accounting break-even tells us how much product must be sold so that the firm's overall accounting profits are not reduced.

15. Accounting Earnings

Earnings of a firm as reported in its income statement. Accounting earnings are affected by several conventions regarding the valuation of assets such as inventories (e.g., LIFO versus FIFO treatment) and by the way some expenditures such as capital investments are recognized over time (such as depreciation expenses).

16. Accounting Income

Income described in terms of accounting earnings, based upon records of transactions in company books kept according to generally accepted principles (GAAP). Accountants generally measure revenues and expenses based on accruals and deferrals rather than cash flows and, in turn, measure the net income of the firm by matching its revenues with the costs it incurred to generate those revenues.

Theoretically, financial analysis should consider **economic income** rather than accounting earnings to determine the value of the firm, since economic income represents the firm's true earnings and cash flows. [See also **Economic income**] However, since economic income is not directly observable, analysts generally use accounting earnings as a proxy. The relationship between economic income and accounting earnings can be related by the following equation:

$$\begin{aligned}&\text{Accounting Income} =\\ &\text{Economic Income (permanent component)}\\ &+ \text{Error (Transitory component).}\end{aligned}$$

17. Accounting Insolvency

Total book liabilities exceed total book value of assets. A firm with negative net worth is insolvent on the books.

18. Accounting Liquidity

The ease and quickness with which assets can be converted to cash. Current assets are the most liquid and include cash and those assets that will be turned into cash within a year from the date of the balance sheet. Fixed assets are the least liquid type of assets.

19. Accounting Rate of Return (ARR)

The accounting rate of return (ARR) method (which is one of the methods for capital budgeting decision) computes a rate of return for a project

based on a ratio of average project income to investment outlay (usually either the total initial investment or the average investment is used). Projects with accounting returns exceeding a management-determined minimum return are accepted; those with returns below the cutoff are rejected. To compute the accounting rate of return, we use the following ratio:

$$ARR = \frac{\text{Average annual net income}}{\text{Total initial investment}}.$$

Similar to the **payback method**, the accounting rate of return method has none of the four desired selection method characteristics. [See also **Payback method**] First, it doesn't even use cash flows; it relies on accounting income. Second, it ignores time value of money concepts. Third, it states no clearly defined, objective decision criterion; like the payback method, its cutoff depends on the discretion of management. Fourth, ARR tells us absolutely nothing about the impact of a project on shareholder wealth.

20. Accounting, Relationship to Finance

The accounting function, quantifies, to a certain extent, the economic relationships within the firm and provides data on which management bases its planning, controlling, and operating decisions. Like accounting, finance deals with value and the monetary resources of the organization. [See also **Finance**]

21. Accounting-Based Beta Forecasting

Elgers (1980) proposed accounting-based beta forecasting. Accounting-based beta forecasts rely upon the relationship of accounting information such as the growth rate of the firm, earning before interest and tax (EBIT), leverage, and the dividend pay-out as a basis for forecasting beta. To use accounting information in beta forecasting, the historical beta estimates are first cross-sectionally related to accounting information such as growth rate, variance of EBIT, leverage, accounting beta, and so on:

$$\beta_i = a_0 + a_1 X_{1i} + a_2 X_{2i} + a_j X_{ji} + \cdots + a_m X_{mi},$$

where β_i is the beta coefficient for ith firm which is estimated in terms of market model. X_{ji} is the jth accounting variables for ith firm, and a_j is the regression coefficient.

22. Accounting-Based Performance Measures

To evaluate firm performance, we can use accounting-based measures such as sales, earnings per share, growth rate of a firm. However, accounting performance measures are vulnerable to distortion by accounting principles, whose application may be somewhat subjective (such as when to recognize revenue or how quickly to depreciate assets). Rather than present an unbiased view of firm performance, accounting statements may be oriented toward the perspective that management wants to present. Additionally, accounting-based performance measures are always *historical*, telling us where the firm has been.

23. Accounts Payable

Money the firm owes to suppliers. These are payments for goods or services, such as raw materials. These payments will generally be made after purchases. Purchases will depend on the sales forecast. Accounts payable is an unfunded short-term debt.

24. Accounts Receivable

Money owed to the firm by customers; the amounts not yet collected from customers for goods or services sold to them (after adjustment for potential bad debts).

25. Accounts Receivable Financing

A secured short-term loan that involves either the assigning of receivables or the factoring of receivables. Under assignment, the lender has a lien on the receivables and recourse to the borrower. Factor-

ing involves the sale of accounts receivable. Then the purchaser, call the factor, must collect on receivables. [See also **Factoring**]

26. Accounts Receivable Turnover

Credit sales divided by average accounts receivable. In general, a higher accounts receivable turnover ratio suggests more frequent payment of receivables by customers. The accounts receivable turnover ratio is written as:

$$\textit{Accounts Receivable Turnover} = \frac{\textit{Sales}}{\textit{Accounts Receivable}}.$$

Thus, if a firm's accounts receivable turnover ratio is larger than the industry average, this implies that the firm's accounts receivable are more efficiently managed than the average firm in that industry.

27. Accreting Swap

A swap where the notional amount increases over the life of the swap. It is used to hedge interest rate risk or agreements with a rising principal value, such as a construction loan.

28. Accrual

The accumulation of income earned or expense incurred, regardless of when the underlying cash flow is actually received or paid.

29. Accrual Bond

A bond that accrues interest but does not pay interest to the investor until maturity when accrued interest is paid with the principal outstanding.

30. Accrual Swap

An interest rate swap where interest on one side accrues only when the floating reference rate is within certain range. The range can be maintained, fixed, or reset periodically during the entire life of the swap.

31. Accrued Interest

Interest income that is earned but not yet received. Alternatively, it refers to pro-rated portion of a bond's coupon payment (c) since the previous coupon date with $(m–d)$ days have passed since the last coupon payment; the accrued interest is $c(m-d)/m$, where m and d represent total days and days left to receive coupon payment, respectively. In a semiannual coupon, if $m = 182$ days, $d = 91$ days and $c = \$60$, then the accrued interest is calculated as:

$$(\$30)\left(\frac{182-91}{182}\right) = \$15.$$

32. Accumulated Benefit Obligation (ABO)

FASB Statement 87 specifies that the measure of corporate pension liabilities to be used on the corporate balance sheet in external reports is the accumulated benefit obligation (ABO), which is the present value of pension benefits owed to employees under the plan's benefit formula absent any salary projections and discounted at a nominal rate of interest.

33. Accumulation Phase

During the accumulation phase, the investor contributes money periodically to one or more open-end mutual funds and accumulates shares. [See also **Variable annuities**]

34. Acid-Test Ratio

A measure of liquidity from reported balance sheet figures with targeted minimum value of one. Calculated as the sum of cash, marketable securities, and accounts receivable divided by current liabilities. [See also **Quick ratio**]

35. Acquisition

Assuming there are two firms, Firm A and Firm B. Acquisition is a form of business combination in which Firm B buys Firm A, and they both remain in existence; Firm B as the parent and Firm A as the subsidiary.

Mergers or acquisitions are also ways for a private firm to raise equity capital by selling all or part of the firm to another corporation. [See also **Merger**] Another firm may pay an attractive price for the equity of the private firm, especially if the private firm has a good strategic fit with the buyer's products and plans, or if the purchase offers a foreign corporation easy entry into the US market. Acquisitions can be negotiated to allow the firm's managers to retain their current positions or to receive lucrative consulting contracts.

Another advantage of a merger or acquisition is when the investor is a large corporation with deep pockets and a willingness to help the firm grow. Such a situation can provide financing for the firm's present and foreseeable future needs. Rather than spending time canvassing banks and equity investors for capital, management can concentrate on doing what it presumably does best: managing the firm to make it grow and succeed.

The drawback to a merger or acquisition is a loss of control. Although a seemingly straightforward consequence, this can be a large stumbling block for a business with a tradition of family ownership or for a group of founding entrepreneurs who consider the firm their "baby." Unless the private equity owners get an exceptional deal from the new owner, a merger or sale causes them to give up the return potential of their business. If the company does grow and succeed after the sale, someone else – the new investor – will reap the benefits. If the original owners stay with the new owner, they may become frustrated by the lack of attention from their new partners if the firm is only a small part of the acquirer's overall business.

36. Active Bond Portfolio Management

An investment policy whereby managers buy and sell securities prior to final maturity to speculate on future interest rate movements. In addition, managers can also identify the relative mispricing within the fixed-income market.

37. Active Management

Attempts to achieve portfolio returns more than commensurate with risk, either by forecasting broad market trends or by identifying particular mispriced sectors of a market or securities in a market.

38. Active Portfolio

In the context of the Treynor-Black model (See Treynor and Black, 1973), the portfolio formed by mixing analyzed stocks of perceived nonzero alpha values. This portfolio is ultimately mixed with the passive market index portfolio. [See also **Alpha** and **Active bond portfolio management**]

39. Activity Charge

A service charge based on the number of checks written by a depositor.

40. Activity Ratios

Activity ratios measure how well a firm is using its resources. Four activity ratios are analyzed: (1) **inventory turnover**, (2) **average collection period**, (3) **fixed-asset turnover**, and (4) **total asset turnover**.

Inventory turnover (sales/inventory) measures how well a firm is turning over its inventory. The average collection period (receivables/sales per day) measures the accounts-receivable turnover. The fixed-asset turnover (sales to net fixed assets) measures the turnover of plant and equipment – a measure of capacity utilization. Total-asset turnover (sales/total assets) measures how efficiently total assets have been utilized.

41. Acts of Bankruptcy

Bankruptcy includes a range of court procedures in the US that may result in the firm being liquidated or financially reorganized to continue operations. This may occur voluntarily if the firm permits a petition for bankruptcy, or a creditor's petition may force the firm into the courts. Such a petition by a creditor charges the firm with committing one of the following acts of bankruptcy: (1) committing fraud while legally insolvent, (2) making preferential disposition of firm assets while legally insolvent, (3) assigning assets to a third party for voluntary liquidation while insolvent, (4) failing to remove a lien on the firm within 30 days while insolvent, (5) appointment of a receiver or trustee while insolvent, or (6) written admission of insolvency.

42. Additions to Net Working Capital

A component of the cash flow of the firm, along with operating cash flow and capital spending. These cash flows are used for making investments in net working capital.

Total cash flow of the firm = Operating cash flow – Capital spending – Additions to net working capital.

43. Add-on Interest

Add-on interest means that the total interest owed on the loan, based on the annual stated interest rate, is added to the initial principal balance before determining the periodic payment. This kind of loan is called an add-on loan. Payments are determined by dividing the total of the principal plus interest by the number of payments to be made. When a borrower repays a loan in a single, lump sum, this method gives a rate identical to annual stated interest. However, when two or more payments are to be made, this method results in an effective rate of interest that is greater than the nominal rate. Putting this into equation form, we see that:

$$PV = \Sigma_{t=1}^{N} \frac{\text{Future Flows}}{(1 + \text{Interest Rate})^{t}},$$

where PV = the present value or loan amount; t = the time period when the interest and principal repayment occur; and N = the number of periods.

For example, if a million-dollar loan were repaid in two six-month installments of $575,000 each, the effective rate would be higher than 15 percent, since the borrower does not have the use of the funds for the entire year. Allowing r to equal the annual percentage rate of the loan, we obtain the following:

$$\$1{,}000{,}000 = \frac{\$575{,}000}{\left(1 + \frac{r}{2}\right)^{1}} + \frac{\$575{,}000}{\left(1 + \frac{r}{2}\right)^{2}}.$$

Using a financial calculator, we see that r equals 19.692 percent, which is also annual percentage return (APR). Using this information, we can obtain the installment loan amortization schedule as presented in the following table.

	Payment	Beginning Balance	Interest (0.19692)/2 X (b)	Principal Paid	Ending Loan Balance
	(a)	(b)	(c)	(d)	(e)
Period				(a) – (c)	(b) – (d)
1	$575,000	$1,000,000	$98.460	$476,540	$523,460
2	575,000	523,460	51,540	523,460	0
Biannual payment:				$575,000	
Initial balance:				$1,000,000	
Initial maturity:				One year	
APR:				19.692%	

44. Add-On Rate

A method of calculating interest charges by applying the quoted rate to the entire amount advanced to a borrower times the number of financing periods. For example, an 8 percent add-on rate indicates $80 interest per $1,000 for 1 year, $160 for 2 years, and so forth. The effective interest rate is higher than the add-on rate because the

borrower makes installment payments and cannot use the entire loan proceeds for full maturity. [See also **Add-on interest**]

45. Adjustable-Rate Mortgage (ARM)

A mortgage whose interest rate varies according to some specified measure of the current market interest rate. The adjustable-rate contract shifts much of the risk of fluctuations in interest rates from the lender to the borrower.

46. Adjusted Beta

The sample beta estimated by market model can be modified by using cross-sectional market information [see Vasicek, 1973]. This kind of modified beta is called adjusted beta. Merrill Lynch's adjusted beta is defined as:

$$\text{Adjusted beta} = \frac{2}{3}\ \text{sample beta} + \frac{1}{3}(1).$$

47. Adjusted Forecast

A (micro or macro) forecast that has been adjusted for the imprecision of the forecast. When we forecast GDP or interest rate over time, we need to adjust for the imprecision of the forecast of either GDP or interest rate.

48. Adjusted Present Value (APV) Model

Adjusted present value model for capital budgeting decision. This is one of the methods used to do capital budgeting for a levered firm. This method takes into account the tax shield value associated with tax deduction for interest expense. The formula can be written as:

$$\text{APV} = \text{NPV} + T_c D,$$

where APV = Adjusted present value; NPV = Net present value; T_c = Marginal corporate tax rate; D = Total corporate debt; and $T_c D$ = Tax shield value.

This method is based upon M&M Proposition I with tax. [See also **Modigliani and Miller (M&M) Proposition I**]

49. ADR

American Depository Receipt: A certificate issued by a US bank which evidences ownership in foreign shares of stock held by the bank. [See also **American depository receipt**]

50. Advance

A payment to a borrower under a loan agreement.

51. Advance Commitment

This is one of the methods for hedging interest rate risk in a real estate transaction. It is a promise to sell an asset before the seller has lined up purchase of the asset. This seller can offset risk by purchasing a futures contract to fix the sale price. We call this a long hedge by a mortgage banker because the mortgage banker offsets risk in the cash market by buying a futures contract.

52. Affiliate

Any organization that is owned or controlled by a bank or bank holding company, the stockholders, or executive officers.

53. Affinity Card

A credit card that is offered to all individuals who are part of a common group or who share a common bond.

54. After-Acquired Clause

A first mortgage indenture may include an after-acquired clause. Such a provision states that any property purchased after the bond issue is considered to be security for the bondholders' claim

against the firm. Such a clause also often states that only a certain percentage of the new property can be debt financed.

55. Aftermarket

The period of time following the initial sale of securities to the public; this may last from several days to several months.

56. After-Tax Real Return

The after-tax rate of return on an asset minus the rate of inflation.

57. After-Tax Salvage Value

After-tax salvage value can be defined as:

$$\textit{After-tax salvage value} = \textit{Price} - T(\textit{Price} - \textit{BV}),$$

where *Price* = market value; *T*= corporate tax rate; and *BV*= book value.

If *T(Price – BV)* is positive, the firm owes taxes, reducing the after-tax proceeds of the asset sale; if *T(Price – BV)* is negative, the firm reduces its tax bill, in essence increasing the after-tax proceeds of the sale. When *T(Price – BV)* is zero, no tax adjustment is necessary.

By their nature, after-tax salvage values are difficult to estimate as both the salvage value and the expected future tax rate are uncertain.

As a practical matter, if the project termination is many years in the future, the present value of the salvage proceeds will be small and inconsequential to the analysis. If necessary, however, analysts can try to develop salvage value forecasts in two ways. First, they can tap the expertise of those involved in secondary market uses of the asset. Second, they can try to forecast future scrap material prices for the asset. Typically, the after-tax salvage value cash flow is calculated using the firm's current tax rate as an estimate for the future tax rate.

The problem of estimating values in the distant future becomes worse when the project involves a major strategic investment that the firm expects to maintain over a long period of time. In such a situation, the firm may estimate annual cash flows for a number of years and then attempt to estimate the project's value as a going concern at the end of this time horizon. One method the firm can use to estimate the project's going-concern value is the **constant dividend growth model**. [See also **Gordon model**]

58. Agency Bond

Bonds issued by federal agencies such as Government National Mortgage Association (GNMA) and government/government-sponsored enterprises such as Small Business Administration (SBA). An Agency bond is a direct obligation of the Treasury even though some agencies are government sponsored or guaranteed. The net effect is that agency bonds are considered almost default-risk free (if not legally so in all cases) and, therefore, are typically priced to provide only a slightly higher yield than their corresponding T-bond counterparts.

59. Agency Costs

The principal-agent problem imposes agency costs on shareholders. Agency costs are the tangible and intangible expenses borne by shareholders because of the self-serving actions of managers. Agency costs can be explicit, out-of-pocket expenses (sometimes called direct agency costs) or more implicit ones (sometimes called implicit agency costs). [See also **Principal-agent problem**]

Examples of explicit agency costs include the costs of auditing financial statements to verify their accuracy, the purchase of liability insurance for board members and top managers, and the monitoring of managers' actions by the board or by independent consultants.

Implicit agency costs include restrictions placed against managerial actions (e.g., the requirement of shareholder votes for some major decisions) and

covenants or restrictions placed on the firm by a lender.

The end result of self-serving behaviors by management and shareholder attempts to limit them is a reduction in firm value. Investors will not pay as much for the firm's stock because they realize that the principal-agent problem and its attendant costs lower the firm's value.

Conflicts of interest among stockholders, bondholders, and managers will rise. Agency costs are the costs of resolving these conflicts. They include the costs of providing managers with an incentive to maximize shareholder wealth and then monitoring their behavior, and the cost of protecting bondholders from shareholders. Agency costs will decline, and firm value will rise, as principals' trust and confidence in their agents rise. Agency costs are borne by stockholders.

60. Agency Costs, Across National Borders

Agency costs may differ across national borders as a result of different accounting principles, banking structures, and securities laws and regulations. Firms in the US and the UK use relatively more equity financing than firms in France, Germany and Japan. Some argue that these apparent differences can be explained by differences in equity and debt agency costs across the countries.

For example, agency costs of equity seem to be lower in the US and the UK. These countries have more accurate systems of accounting (in that the income statements and balance sheets are higher quality reflecting actual revenues and expenses, assets and liabilities) than the other countries, and have higher auditing standards. Dividends and financial statements are distributed to shareholders more frequently, as well, which allows shareholders to monitor management more easily.

Germany, France, and Japan, on the other hand, all have systems of debt finance that may reduce the agency costs of lending. In other countries, a bank can hold an equity stake in a corporation, meet the bulk of the corporation's borrowing needs, and have representation on the corporate board of directors. Corporations can own stock in other companies and also have representatives on other companies' boards. Companies frequently get financial advice from groups of banks and other large corporations with whom they have interlocking directorates. These institutional arrangements greatly reduce the monitoring and agency costs of debt; thus, debt ratios are substantially higher in France, Germany, and Japan.

61. Agency Problem

Conflicts of interest among stockholders, bondholders, and managers.

62. Agency Securities

Fixed-income securities issued by agencies owned or sponsored by the federal government. The most common securities are issued by the Federal Home Loan Bank, Federal National Mortgage Association, and Farm Credit System.

63. Agency Theory

The theory of the relationship between principals and agents. It involves the nature of the costs of resolving conflicts of interest between principals and agents. [See also **Agency cost**]

64. Agents

Agents are representatives of insurers. There are two systems used to distribute or sell insurance. The direct writer system involves an agent representing a single insurer, whereas the independent agent system involves an agent representing multiple insurers. An independent agent is responsible for running an agency and for the operating costs associated with it. Independent agents are compensated through commissions, but direct writers may receive either commissions or salaries.

65. Aggregation

This is a process in long-term financial planning. It refers to the smaller investment proposals of each of the firm's operational units are added up and in effect treated as a big picture.

66. Aging Accounts Receivable

A procedure for analyzing a firm's accounts receivable by dividing them into groups according to whether they are current or 30, 60, or over 90 days past due. [See also **Aging schedule of accounts receivable**]

67. Aging Schedule of Accounts Receivable

A compilation of accounts receivable by the age of account.

Typically, this relationship is evaluated by using the average collection period ratio. This type of analysis can be extended by constructing an aging-of-accounts-receivable table. The following table shows an example of decline in the quality of accounts receivable from January to February as relatively more accounts have been outstanding for 61 days or longer. This breakdown allows analysis of the cross-sectional composition of accounts over time. A deeper analysis can assess the risk associated with specific accounts receivable, broken down by customer to associate the probability of payment with the dollar amount owed.

	January		February	
Days Outstanding	Accounts Receivable Range	Percent of Total	Accounts Receivable Range	Percent of Total
0–30 days	$250,000	25.0%	$250,000	22.7%
31–60 days	500,000	50.0	525,000	47.7
61–90 days	200,000	20.0	250,000	22.7
Over 90 days	50,000	5.0	75,000	6.8
Total accounts receivable	$1,000,000	100.0%	$1,100,100	100.0%

68. All-in-Cost

The weighted average cost of funds for a bank calculated by making adjustments for required reserves and deposit insurance costs, the sum of explicit and implicit costs.

69. Allocational Efficiency

The overall concept of allocational efficiency is one in which security prices are set in such a way that investment capital is directed to its optimal use. Because of the position of the US in the world economy, the allocational responsibility of the US markets can be categorized into international and domestic efficiency. Also, since the overall concept of allocational efficiency is too general to test, operational efficiency must be focused upon as a testable concept.

70. Allowance for Loan and Lease Losses

An accounting reserve set aside to equate expected (mean) losses from credit defaults. It is common to consider this reserve as the buffer for expected losses and some risk-based economic capital as the buffer for unexpected losses.

71. Alpha

The abnormal rate of return on a security in excess of what would be predicted by an equilibrium model like CAPM or APT. For CAPM, the alpha for the ith firm (α_i) can be defined as:

$$\alpha_i = (\overline{R}_i - R_f) - \beta_i(\overline{R}_m - R_f),$$

where $\overline{R}_i$ = average return for the ith security, $\overline{R}_m$ = average market rate of return, R_f = risk-free rate, and β_i = beta coefficient for the ith security.

Treynor and Black (1973) has used the alpha value to form active portfolio.

72. Alternative Minimum Tax (AMT)

A federal tax against income intended to ensure that taxpayers pay some tax even when they use tax shelters to shield income.

73. American Depository Receipt (ADR)

A security issued in the US to present shares of a foreign stock, enabling that stock to be traded in the US. For example, Taiwan Semiconductors (TSM) from Taiwan has sold ADRs in the US.

74. American Option

An American option is an option that can be exercised at any time up to the expiration date. The factors that determine the values of American and **European options** are the same except the time to exercise the option; all other things being equal, however, an American option is worth more than a European option because of the extra flexibility it grants the option holder. [See also **European option**]

75. Amortization

Repayment of a loan in installments. Long-term debt is typically repaid in regular amounts over the life of the debt. At the end of the amortization the entire indebtedness is said to be extinguished. Amortization is typically arranged by a **sinking fund**. Each year the corporation places money into a sinking fund, and the money is used to buy back the bond. [See also **Sinking fund**]

76. Amortization Schedule for a Fixed-Rate Mortgage

Amortization schedule for a fixed-rate mortgage is used to calculate either the monthly or the annual payment for a fixed rate mortgage. The following example is used to show the procedure for calculating annual payment for a fixed-rate mortgage.

Suppose Bill and Debbie have taken out a home equity loan of \$5,000, which they plan to repay over three years. The interest rate charged by the bank is 10 percent. For simplicity, assume that Bill and Debbie will make annual payments on their loan. (a) Determine the annual payments necessary to repay the loan. (b) Construct a loan amortization schedule.

(a) Finding the annual payment requires the use of the present value of an annuity relationship:

$$\begin{aligned}\text{PVAN} &= (\$CF)\left[\frac{1-\left(\frac{1}{1+r}\right)^{n}}{r}\right] \\ &= (\$CF)\left[\frac{1-\left(\frac{1}{1+.10}\right)^{3}}{.10}\right] \\ &= \$5000 = (\$CF)(2.48685)\,.\end{aligned}$$

This result is an annual payment ($\$CF$) of \$5,000/2.48685 = \$2,010.57.

(b) Below is the loan amortization schedule constructed for Bill and Debbie:

Year	Beginning Balance	Annuity Payments	Interest Paid (2) × 0.10	Principal Paid (3) − (4)	Ending Balance (2) − (5)
(1)	(2)	(3)	(4)	(5)	(6)
1	\$5,000.00	\$2,010.57	\$500.00	\$1,510.57	\$3,489.43
2	3,489.43	2,010.57	348.94	1,661.63	1,827.80
3	1,827.80	2,010.57	182.78	1,827.79	0.01

77. Amortize

To reduce a debt gradually by making equal periodic payments that cover interest and principal owed. In other words, it liquidates on an installment basis. [See also **Amortization**]

78. Amortizing Swap

An interest rate swap in which the outstanding notional principal amount declines over time. It generally is used to hedge interest rate risk or mortgage or other amortized loan.

79. Angels

Individuals providing venture capital. These investors do not belong to any venture-capital firm; these investors act as individuals when providing financing. However, they should not be viewed as isolated investors.

80. Announcement Date

Date on which particular news concerning a given company is announced to the public; used in **event studies**, which researchers use to evaluate the economic impact of events of interest. For example, an event study can be focused on a dividend announcement date. [See also **Event studies**]

81. Announcement Effect

The effect on stock returns for the first trading day following an event announcement. For example, an earnings announcement and a dividend announcement will affect the stock price.

82. Annual Effective Yield

Also called the **effective annual rate (EAR)**. [See also **Effective annual rate (EAR)**]

83. Annual Percentage Rate (APR)

Banks, finance companies, and other lenders are required by law to disclose their borrowing interest rates to their customers. Such a rate is called a contract or stated rate, or more frequently, an annual percentage rate (APR). The method of calculating the APR on a loan is preset by law. The APR is the interest rate charged per period multiplied by the number of periods in a year:

$$APR = r \times m,$$

where r = periodic interest charge, and m = number of periods per year.

However, the APR misstates the true interest rate. Since interest compounds, the APR formula will understate the true or effective interest cost. The **effective annual rate (EAR)**, sometimes called the *annual effective yield*, adjusts the APR to take into account the effects of compounded interest over time. [See also **Effective annual rate (EAR)**]

It is useful to distinguish between a contractual or stated interest rate and the group of rates we call yields, effective rates, or market rate. A contract rate, such as the annual percentage rate (APR), is an expression that is used to specify interest cash flows such as those in loans, mortgages, or bank savings accounts. The yield or effective rate, such as the effective annual rate (EAR), measures the opportunity costs; it is the true measure of the return or cost of a financial instrument.

84. Annualized Holding-Period Return

The annual rate of return that when compounded T times, would have given the same T-period holding return as actual occurred from period 1 to period T. If R_t is the return in year t (expressed in decimals), then:

$$(1 + R_1) \times (1 + R_2) \times (1 + R_3) \times (1 + R_4)$$

is called a four-year holding period return.

85. Annuity

An annuity is a series of consecutive, equal cash flows over time. In a regular annuity, the cash flows are assumed to occur at the *end* of each time period. Examples of financial situations that involve equal cash flows include fixed interest payments on a bond and cash flows that may arise from insurance contracts, retirement plans, and

amortized loans such as car loans and home mortgages.

The future value of an n-period annuity of $\$C$ per period is

$$FVAN = \$C[1 + (1+r) + (1+r)^2 + (1+r)^3 + \ldots + (1+r)^{n-1}],$$

which can be reduced to:

$$FVAN = \$C\left[\frac{(1+r)^n - 1}{r}\right] = \$C \times FVIFA(r,n),$$

where $FVIFA$ (r,n) represents the future value interest factor for an annuity.

To find the present value of an n-period annuity of $\$C$ per period is

$$PVAN = \$C\left[\frac{1}{(1+r)} + \frac{1}{(1+r)^2} + \frac{1}{(1+r)^3} + \ldots + \frac{1}{(1+r)^n}\right],$$

which can be shown as:

$$PVAN = \$C\left[\frac{1}{r} - \frac{1}{(1+r)^n}\right] = \$CF \times PVIFA(r,n),$$

where $PVIFA(r,n)$ is the present value interest factor for an annuity.

86. Annuity Due

When a cash flow occurs at the *beginning* of each annuity period, the annuity becomes an annuity due. Since the cash flows in the n-year annuity due occurs at the beginning of each year, they are invested for one extra period of time compared to the n-year regular annuity. This means all the annuity due cash flows are invested at r percent interest for an extra year.

To take this one extra year of compounding into account, the future value interest factor for an annuity [$FVIFA$ (r,n)] can be multiplied by $(1+r)$ to determine the future value interest factor for an annuity due (FVANDUE):

$$\text{FVANDUE} = \$C\left[\frac{(1+r)^n - 1}{r}\right](1+r)$$
$$= \$C \times FVIFA(r,n) \times (1+r).$$

Many situations also require present value calculations for cash flows that occur at the beginning of each time period. Examples include retirement checks that arrive on the first of the month and insurance premiums that are due on the first of the month. Again, the cash flows for the n-year annuity due occur one year *earlier* than those of the n-year regular annuity, making them more valuable. As in determining the FVANDUE, we can adjust for this simply by multiplying the corresponding PVIFA by $(1+r)$ to reflect the fact that the cash flows are received one period sooner in an annuity due. The formula for the present value of an annuity due (PVANDUE) is

$$\text{PVANDUE} = \$C\left[\frac{1 - \left(\frac{1}{1+r}\right)^n}{r}\right] \times (1+r)$$
$$= \$C \times PVIFA(r,n) \times (1+r).$$

87. Annuity Factor

The term used to calculate the present value or future value of the stream of level payments for a fixed period. [See also **Annuity**]

88. Annuity in Advance

An annuity with an immediate initial payment. This is called annuity due. [See also **Annuity due**]

89. Annuity in Arrears

An annuity with a first payment one full period hence, rather than immediately. That is, the first payment occurs on date 1 rather than on date 0.

90. Anticipated Income Theory

A theory that the timing of loan payments should be tied to the timing of a borrower's expected income.

91. Antithetic Variate Method

A technique used in Monte Carlo valuation, in which each random draw is used to create two simulated prices from opposite tails of the asset price distribution. This is one of the variance reduction procedures. Other method is stratified sampling method [See **Stratified sampling**]

92. Applied Research

A research and development (R&D) component that is riskier than **development projects**. [See also **Development projects**] It seeks to add to the firm's knowledge base by applying new knowledge to commercial purposes.

93. Appraisal Ratio

The signal-to-noise ratio of an analyst's forecasts. The ratio of alpha to residual standard deviation. This ratio measures abnormal return per unit of risk that in principle could be diversified away by holding a market index portfolio.

94. Appraisal Rights

Rights of shareholders of an acquired firm that allow them to demand that their shares be purchased at a fair value by the acquiring firm.

95. Appreciation

An increase in the market value of an asset. For example, you buy one share of IBM stock at \$90. After one year you sell the stock for \$100, then this investment appreciated by 11.11 percent.

96. Appropriation Phase of Capital Budgeting

The focus of the appropriation phase, sometimes called the *development* or *selection phase*, is to appraise the projects uncovered during the identification phase. After examining numerous firm and economic factors, the firm will develop estimates of expected cash flows for each project under examination. Once cash flows have been estimated, the firm can apply time value of money techniques to determine which projects will increase shareholder wealth the most.

The appropriation phase begins with information generation, which is probably the most difficult and costly part of the phase. Information generation develops three types of data: internal financial data, external economic and political data, and nonfinancial data. This data supports forecasts of firm-specific financial data, which are then used to estimate a project's cash flows. Depending upon the size and scope of the project, a variety of data items may need to be gathered in the information generation stage. Many economic influences can directly impact the success of a project by affecting sales revenues, costs, exchange rates, and overall project cash flows. Regulatory trends and political environment factors, both in the domestic and foreign economies, also may help or hinder the success of proposed projects.

Financial data relevant to the project is developed from sources such as marketing research, production analysis, and economic analysis. Using the firm's research resources and internal data, analysts estimate the cost of the investment, working capital needs, projected cash flows, and financing costs. If public information is available on competitors' lines of business, this also needs to be incorporated into the analysis to help estimate potential cash flows and to determine the effects of the project on the competition.

Nonfinancial information relevant to the cash flow estimation process includes data on the various means that may be used to distribute products to consumers, the quality and quantity of the domestic or nondomestic labor forces, the dynamics

of technological change in the targeted market, and information from a strategic analysis of competitors. Analysts should assess the strengths and weaknesses of competitors and how they will react if the firm undertakes its own project.

After identifying potentially wealth-enhancing projects, a written proposal, sometimes called a *request for appropriation* is developed and submitted to the manager with the authority to approve. In general, a typical request for appropriation requires an executive summary of the proposal, a detailed analysis of the project, and data to support the analysis.

The meat of the appropriation request lies in the detailed analysis. It usually includes sections dealing with the need for the project, the problem or opportunity that the project addresses, how the project fits with top management's stated objectives and goals for the firm, and any impact the project may have on other operations of the firm.

The appropriation process concludes with a decision. Based upon the analysis, top management decides which projects appear most likely to enhance shareholder wealth. The decision criterion should incorporate the firm's primary goal of maximizing shareholder wealth.

97. Arbitrage

Arbitrage is when traders buy and sell virtually identical assets in two different markets in order to profit from price differences between those markets.

Besides currencies, traders watch for price differences and arbitrage opportunities in a number of financial markets, including stock markets and futures and options markets. In the real world, this process is complicated by trading commissions, taxes on profits, and government restrictions on currency transfers. The vigorous activity in the foreign exchange markets and the number of traders actively seeking risk-free profits prevents arbitrage opportunities based on cross-rate mispricing from persisting for long.

In other words arbitrage refers to buying an asset in one market at a lower price and simultaneously selling an identical asset in another market at a higher price. This is done with no cost or risk.

98. Arbitrage Condition

Suppose there are two riskless assets offering rates of return r and r', respectively. Assuming no transaction costs, one of the strongest statements that can be made in positive economics is that

$$r = r'. \tag{A}$$

This is based on the law of one price, which says that the same good cannot sell at different prices. In terms of securities, the law of one price says that securities with identical risks must have the same expected return. Essentially, equation (A) is a arbitrage condition that must be expected to hold in all but the most extreme circumstances. This is because if $r > r'$, the first riskless asset could be purchased with funds obtained from selling the second riskless asset. This arbitrage transaction would yield a return of $r - r'$ without having to make any new investment of funds or take on any additional risk. In the process of buying the first asset and selling the second, investors would bid up the former's price and bid down the latter's price. This repricing mechanism would continue up to the point where these two assets' respective prices equaled each other. And thus $r = r'$.

99. Arbitrage Pricing Theory (APT)

Ross (1970) derived a generalized capital asset pricing relationship called the arbitrage pricing theory (APT). To derive the APT, Ross assumed the expected rate of return on asset i at time t, $\mathrm{E}(\mathrm{R}_{it})$, could be explained by k independent influences (or factors):

$$E(R_{it}) = \alpha + \beta_{i1}(\text{factor 1}) + \beta_{i2}(\text{factor 2}) + \cdots + \beta_{ik}(\text{factor } k),$$

where β_{ik} measures the sensitivity of the ith asset's returns to changes in factor k (sometimes called

index k). In the terminology of factor analysis, β_{ik}'s are called factor loading.

Using the prior equation, Ross shows that the actual return of the ith security can be defined as:

$$R_i = E(R_i) + [F_1 - E(F_1)]\beta_{i1} + \cdots + [F_k - E(F_k)]\beta_{ik},$$

where $[F_k - E(F_k)]$ represents the surprise or change in the kth factor brought about by systematic economic events.

Like the **capital asset pricing model (CAPM)**, the APT assumes that investors hold diversified portfolios, so only systematic risks affect returns. [See also **Capital asset pricing model (CAPM)**] The APT's major difference from the CAPM is that it allows for more than one systematic risk factor. The APT is a *generalized* capital asset pricing model; the CAPM is a special, one-factor case of the APT, where the one factor is specified to be the return on the market portfolio.

The APT does have a major practical drawback. It gives no information about the specific factors that drive returns. In fact, the APT does not even tell us how many factors there are. Thus, testing the APT is purely empirical, with little theory to guide researchers. Estimates of the number of factors range from two to six; some studies conclude that the market portfolio return is one of the return-generating factors, while others do not. Some studies conclude that the CAPM does a better job in estimating returns; others conclude that APT is superior.

The jury is still out on the superiority of the APT over the CAPM. Even though the APT is a very intuitive and elegant theory and requires much less restrictive assumptions than the CAPM, it currently has little practical use. It is difficult both to determine the return-generating factors and to test the theory.

In sum, an equilibrium asset pricing theory that is derived from a factor model by using diversification and arbitrage. It shows that the expected return on any risky asset is a linear combination of various factors.

100. Arbitrageur

An individual engaging in arbitrage. [See also **Arbitrage**]

101. Arithmetic Average

The risk of an item is reflected in its variability from its average level. For comparison, a stock analyst may want to determine the level of return and the variability in returns for a number of assets to see whether investors in the higher risk assets earned a higher return over time. A financial analyst may want to examine historical differences between risk and profit on different types of new product introductions or projects undertaken in different countries.

If historical, or ex-post, data are known, an analyst can easily compute historical average return and risk measures. If X_t represents a data item for period t, the arithmetic average $\overline{X}$, over n periods is given by:

$$\overline{X} = \frac{\sum_{t=1}^{n} X_t}{n}.$$

In summary, the sum of the values observed divided by the total number of observation—sometimes referred to as the mean. [See also **Geometric average**]

102. Arithmetic Mean

[See **Arithmetic average**]

103. ARM

Adjustable rate mortgage is a mortgage in which the contractual interest rate is tied to some index of interest rates (prime rate for example) and changes when supply and demand conditions change the underlying index. [See also **Adjustable rate mortgage**]

104. Arrears

An overdue outstanding debt. In addition, we use arrearage to indicate the overdue payment.

105. Asian Option

An option in which the payoff at maturity depends upon an average of the asset prices over the life of the option.

106. Asian Tail

A reference price that is computed as an average of recent prices. For example, an equity-linked note may have a payoff based on the average daily stock price over the last 20 days (the Asian tail).

107. Ask Price

The price at which a dealer or market-maker offers to sell a security. Also called the *offer price*.

108. Asset Allocation Decision

Choosing among broad asset classes such as stocks versus bonds. In other words, asset allocation is an approach to investing that focuses on determining the mixture of asset classes that is most likely to provide a combination to risk and expected return that is optimal for the investor. In addition to this, portfolio insurance is an asset-allocation or hedging strategy that allows the investor to alter the amount of risk he or she is willing to accept by giving up some return.

109. Asset Management Ratios

Asset management ratios (also called activity or *asset utilization ratios*) attempt to measure the efficiency with which a firm uses its assets.

Receivables Ratios

Accounts receivable turnover ratio is computed as credit sales divided by accounts receivable. [See also **Accounts receivable turnover ratio**] In general, a higher accounts receivable turnover ratio suggests more frequent payment of receivables by customers. The accounts receivable turnover ratio is written as:

$$\text{Accounts receivable turnover} = \frac{\text{Sales}}{\text{Accounts receivable}}.$$

Thus, if a firm's accounts receivable turnover ratio is larger than the industry average; this implies that the firm's accounts receivable are more efficiently managed that the average firm in that industry.

Dividing annual sales by 365 days gives a daily sales figure. Dividing accounts receivable by daily sales gives another asset management ratio, the **average collection period of credit sales**. In general, financial managers prefer shorter collection periods over longer periods. [See also **Average collection period**]

Comparing the average collection period to the firm's credit terms indicates whether customers are generally paying their accounts on time. The **average collection period** is given by:

$$\text{Average collection period} = \frac{\text{Accounts receivable}}{\text{Sales}/365}.$$

The average collection period (ACP) is easy to calculate and can provide valuable information when compared to current credit terms or past trends.

One major drawback to the ACP calculation, however, is its sensitivity to changing patterns of sales. The calculated ACP rises with increases in sales and falls with decreases in sales. Thus, changes in the ACP may give a deceptive picture of a firm's actual payment history. Firms with seasonal sales should be especially careful in analyzing accounts receivable patterns based on ACP. For instance, a constant ACP could hide a longer payment period if it coincides with a decrease in sales volume. In this case, the ACP calculation would fail to properly signal a deterioration in the collection of payments.

Inventory Ratios

The **inventory turnover ratio** is a measure of how quickly the firm sells its inventory. [See also

Inventory turnover ratio] It is computed as cost of goods sold divided by inventory. The ratio clearly depends upon the firm's inventory accounting method: for example, last-in, first-out (LIFO) or first-in, first-out (FIFO). The inventory turnover ratio is written as:

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Inventory}}.$$

It is an easy mistake to assume that higher inventory turnover is a favorable sign; it also may signal danger. An increasing inventory turnover may raise the possibility of costly stockouts. Empty shelves can lead to dissatisfied customers and lost sales.

Fixed and Total Assets Ratio

The **total asset turnover ratio** is computed as sales divided by total assets. [See also **Total asset turnover ratio**] The fixed asset turnover ratio is sales divided by fixed assets. Similar to the other turnover ratio, these ratios indicate the amount of sales generated by a dollar of total and fixed assets, respectively. Although managers generally favor higher fixed and total asset turnover ratios, these ratios can be *too* high. The fixed asset turnover ratio may be large as a result of the firm's use of old, depreciated equipment. This would indicate that the firm's reliance on old technology could hurt its future market position, or that it could face a large, imminent expense for new equipment, including the downtime required to install it and train workers.

A large total asset turnover ratio also can result from the use of old equipment. Or, it might indicate inadequate receivables arising from an overly strict credit system or dangerously low inventories.

The asset turnover ratios are computed as:

$$\text{Total asset turnover} = \frac{\text{Sales}}{\text{Total assets}},$$

$$\text{Fixed asset turnover} = \frac{\text{Sales}}{\text{Fixed assets}}.$$

110. Asset Sensitive

A bank is classified as asset sensitive if its GAP is positive. Under this case interest rate sensitive asset is larger than interest rate sensitive liability.

111. Asset Swap

Effectively transforms an asset into an asset of another type, such as converting a fixed rate bond into a floating-rate bond. Results in what is known as a "synthetic security."

112. Asset Turnover (ATO)

The annual sales generated by each dollar of assets (sales/assets). It can also be called as asset utilization ratio.

113. Asset-Backed Debt Securities (ABS)

Issuers of credit have begun following the lead set by mortgage lenders by using asset securitization as a means of raising funds. Securitization meaning that the firm repackages its assets and sells them to the market.

In general, an ABS comes through certificates issued by a grantor trust, which also registers the security issue under the Securities Act of 1933. These securities are sold to investors through underwritten public offerings or private placements. Each certificate represents a fractional interest in one or more pools of assets. The selling firm transfers assets, with or without recourse, to the grantor trust, which is formed and owned by the investors, in exchange for the proceeds from the certificates. The trustee receives the operating cash flows from the assets and pays scheduled interest and principal payments to investors, servicing fees to the selling firm, and other expenses of the trust.

From a legal perspective, the trust owns the assets that underlie such securities. These assets will not be consolidated into the estate of the selling firm if it enters into bankruptcy.

To date, most ABS issues have securitized automobile and credit-card receivables. It is expected that this area will grow into other fields, such as computer leases, truck leases, land and property leases, mortgages on plant and equipment, and commercial loans.

114. Asset-Backed Security

A security with promised principal and interest payments backed or collateralized by cash flows originated from a portfolio of assets that generate the cash flows.

115. Asset-Based Financing

Financing in which the lender relies primarily on cash flows generated by the asset financed to repay the loan.

116. Asset-Liability Management

The management of a bank's entire balance sheet to achieve desired risk-return objectives and to maximize the market value of stockholders' equity. Asset-liability management is the management of the net interest margin to ensure that its level and riskness are compatible with risk/return objectives of the institution.

117. Asset-or-Nothing Call

An option that pays a unit of the asset if the asset price exceeds the strike price at expiration or zero otherwise.

118. Asset-or-Nothing Option

An option that pays a unit of the asset if the option is in-the-money or zero otherwise.

119. Assets

Anything that the firm owns. It includes current, fixed and other assets. Asset can also be classified as tangible and intangible assets.

120. Assets Requirements

A common element of a financial plan that describes projected capital spending and the proposed uses of net working capital. Asset requirements increase when sales increase.

121. Assignment

The transfer of the legal right or interest on an asset to another party.

122. Assumable Mortgage

The mortgage contract is transferred from the seller to the buyer of the house.

123. Asymmetric Butterfly Spread

A butterfly spread in which the distance between strike prices is not equal. [See also **Butterfly spread**]

124. As-You-Like-It Option

[See **Chooser option**]

125. At The Money

The owner of a put or call is not obligated to carry out the specified transaction but has the *option* of doing so. If the transaction is carried out, it is said to have been *exercised*. *At the money* means that the stock price is trading at the exercise price of the option.

126. Auction Market

A market where all traders in a certain good meet at one place to buy or sell and asset. The NYSE is an example for stock auction market.

127. Audit, or Control, Phase of Capital Budgeting Process

The audit, or control, phase is the final step of the capital budgeting process for approved projects. In

this phase, the analyst tracks the magnitude and timing of expenditures while the project is progressing. A major portion of this phase is the post-audit of the project, through which past decisions are evaluated for the benefit of future project analyses.

Many firms review spending during the control phase of approved projects. Quarterly reports often are required in which the manager overseeing the project summarizes spending to date, compares it to budgeted amounts, and explains differences between the two. Such oversight during this implementation stage slows top managers to foresee cost overruns. Some firms require projects that are expected to exceed their budgets by a certain dollar amount or percentage to file new appropriation requests to secure the additional funds. Implementation audits allow managers to learn about potential trouble areas so future proposals can account for them in their initial analysis. Implementation audits generally also provide top management with information on which managers generally provide the most accurate estimates of project costs.

In addition to implementation costs, firms also should compare forecasted cash flows to actual performance after the project has been completed. This analysis provides data regarding the accuracy over time of cash flow forecasts, which will permit the firm to discover what went right with the project, what went wrong, and why. Audits force management to discover and justify any major deviations of actual performance from forecasted performance. Specific reasons for deviations from the budget are needed for the experience to be helpful to all involved. Such a system also helps to control intra-firm agency problems by helping to reduce ''padding'' (i.e., overestimating the benefits of favorite or convenient project proposals). This increases the incentives for department heads to manage in ways that will help the firm achieve its goals.

Investment decisions are based on estimates of cash flows and relevant costs, while in some firms the post-audit is based on accrued accounting and assigned overhead concepts. The result is that managers make decisions based on cash flow, while they are evaluated by an accounting-based system.

A concept that appears to help correct this evaluation system problem is **economic value added (EVA)**. [See also **Economic value added (EVA)**]

The control or post-audit phase sometimes requires the firm to consider terminating or abandoning an approved project. The possibility of abandoning an investment prior to the end of its estimated useful or economic life expands the options available to management and reduces the risk associated with decisions based on holding an asset to the end of its economic life. This form of contingency planning gives decision makers a second chance when dealing with the economic and political uncertainties of the future.

128. Audits of Project Cash Flow Estimated

Capital budgeting audits can help the firm learn from experience. By comparing actual and estimated cash flows, the firm can try to improve upon areas in which forecasting accuracy is poor.

In a survey conducted in the late 1980s, researchers found that three-fourths of the responding *Fortune 500* firms audited their cash flow estimates. Nearly all of the firms that performed audits compared initial investment outlay estimates with actual costs; all evaluated operating cash flow estimates; and two-thirds audited salvage-value estimates. About two-thirds of the firms that performed audits claimed that actual initial investment outlay estimates usually were within 10 percent of forecasts. Only 43 percent of the firms that performed audits could make the same claim with respect to operating cash flows. Over 30 percent of the firms confessed that operating cash flow estimates differed from actual performance by 16 percent or more. This helps to illustrate that our cash flow estimates are merely point estimates of a random variable. Because of their uncertainty, they may take on higher or lower values than their estimated value.

To be successful, the cash flow estimation process requires a commitment by the corporation and its top policy-setting managers; this commitment includes the type of management information system the firm uses to support the estimation process. Past experience in estimating cash flows, requiring cash flow estimates for all projects, and maintaining systematic approaches to cash flow estimation appear to help firms achieve success in accurately forecasting cash flows.

129. Autocorrelation [Serial Correlation]

The correlation of a variable with itself over successive time intervals. The correlation coefficient can be defined as:

$$\rho = \frac{\text{cov}(r_t, r_{t-1})}{\sigma_t \sigma_{t-1}} .$$

It can be defined as where cov(r_t, r_{t-1}) is the covariance between r_t, r_{t-1},σ_t and σ_{t-1} are standard deviation r_t and r_{t-1}, respectively.

Two useful empirical examples of autocorrelation are:

Interest rates exhibit mean reversion behavior and are often negatively auto correlated (i.e., an up move one day will suggest a down move the next). But note that mean reversion does not technically necessitate negative autocorrelation.

Agency credit ratings typically exhibit move persistence behavior and are positively auto correlated during downgrades (i.e., a downgrade will suggest another downgrade soon). But, for completeness, note that upgrades do not better predict future upgrades.

130. Automated Clearing House System (ACH)

An Automated Clearing House (ACH) system is an information transfer network that joins banks or other financial institutions together to facilitate the transfer of cash balances. An ACH system has a high initial fixed cost to install but requires a very low variable cost to process each transaction. The Federal Reserve operates the nation's primary ACH, which is owned by the member banks of the Federal Reserve System. Most banks are members of an ACH.

Instead of transferring information about payments or receipts via paper documents like checks, an ACH transfers the information electronically via a computer.

131. Automated Clearinghouse

A facility that processes interbank debits and credits electronically.

132. Automated Loan Machine

A machine that serves as a computer terminal and allows a customer to apply for a loan and, if approved, automatically deposits proceeds into an account designated by the customer.

133. Automated Teller Machines (ATM)

The globalization of automated teller machines (ATMs) is one of the newer frontiers for expansion for US financial networks. The current system combines a number of worldwide communication switching networks, each one owned by a different bank or group of banks.

A global ATM network works like a computerized constellation of switches. Each separate bank is part of a regional, national, and international financial system.

After the customer inserts a credit card, punches a personal identification number (PIN), and enters a transaction request, the bank's computer determines that the card is not one of its own credit cards and switches the transaction to a national computer system. The national system, in turn, determines that the card is not one of its own, so it switches to an international network, which routes the request to the US Global Switching Center. The center passes the request to a regional computer system in the US, which evaluates the request and responds

through the switching network. The entire time required for this process, from initiation at the ATM until the response is received, is reassured in seconds. The use, acceptance, and growth of systems like this will revolutionize the way international payments are made well into the 21st century.

134. Availability Float

It refers to the time required to clear a check through the banking system. This process takes place by using either Fed-check collection services, corresponding banks or local clearing houses.

135. Average Accounting Return (AAR)

The average project earnings after taxes and depreciation divided by the average book value of the investment during its life. [See also **Accounting rate of return**]

136. Average Annual Yield

A method to calculate interest that incorrectly combines simple interest and compound interest concepts on investments of more than one year. For example, suppose you invested $10,000 in a five-year CD offering 9.5 percent interest compounded quarterly, you would have $15,991.10 in the account at the end of five years. Dividing your $5,991.10 total return by five, the average annual return will be 11.98 percent.

137. Average Collection Period

Average amount of time required to collect an accounting receivable. Also referred to as days sales outstanding. [See also **Asset management ratios** and **Activity ratios**]

138. Average Cost of Capital

A firm's required payout to the bondholders and the stockholders expressed as a percentage of capital contributed to the firm. Average cost of capital is computed by dividing the total required cost of capital by the total amount of contributed capital. Average cost of capital (ACC) formula can be defined as:

$$ACC = \frac{S}{V} r_E + \frac{B}{V}(1 - \tau_c)i,$$

where $V =$ total market value of the firm; $S =$ value of stockholder's equity; $B =$ value of debt; $r_E =$ rate of return of stockholder's equity; $i =$ interest rate on debt; and $\tau_c =$ corporate tax rate.

Here, r_E is the cost of equity, and $(1 - \tau_c)i$ is the cost of debt. Hence, ACC is a weighted average of these two costs, with respective weights S/V and B/V.

139. Average Daily Sales

Annual sales divided by 365 days.

140. Average Exposure

Credit exposure arising from market-driven instruments will have an ever-changing market-to-market exposure amount. The average exposure represents the average of several expected exposure values calculated at different forward points over the life of swap starting from the end of the first year. The expected exposures are weighted by the appropriate discount factors for this average calculation.

141. Average Price Call Option

The payoff of average price call option $= \max[0, A(T) - K]$, where A(T) is the arithmetic average of stock price over time and K is the strike price. This implies that the payoff of this option is either equal to zero or larger than zero. In other words, the amount of payoff is equal to the difference between A(T) and K.

142. Average Price Put Option

The payoff of average price put option $= \max[0, K - A(T)]$, where A(T) is the arithmetic average of

stock price per share over time and K is the strike price. This implies that the payoff of this option is either equal to zero or larger than zero. In other words, the amount of payoff is equal to the difference between K and A(T).

143. Average Shortfall

The expected loss given that a loss occurs, or as the expected loss given that losses exceed a given level.

144. Average Strike Option

An option that provides a payoff dependent on the difference between the final asset price and the average asset price. For example, an average strike call $= \max[0, S_T - A(T)]$, where A(T) represents average stock price per share over time and S_T represents stock price per share in period T.

145. Average Tax Rate

The average tax rate is the tax bill of a firm divided by its earnings before income taxes (i.e., pretax income). For individuals, it is their tax bill divided by their taxable income. In either case, it represents the percentage of total taxable income that is paid in taxes.