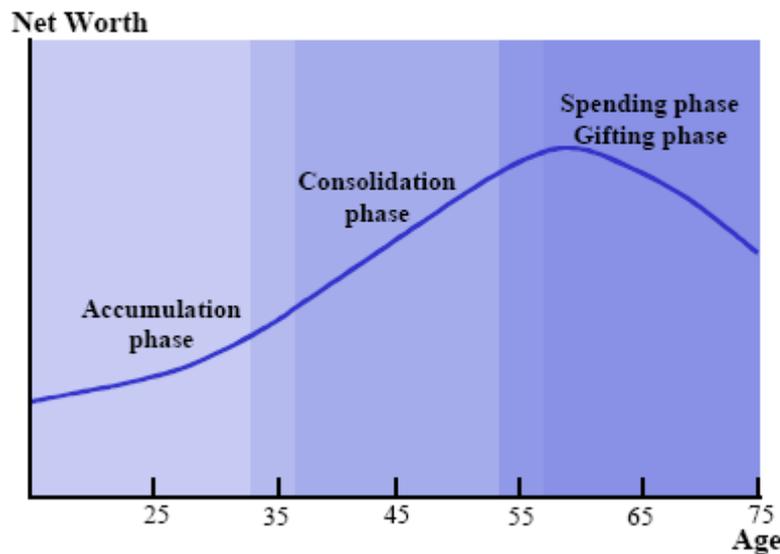


## Portfolio Management

1. A zero-beta asset is an asset which has no correlation with the returns of the market.
2. Lending portfolios: combinations of a risky portfolio with the riskless asset as a part of the investment is made or lent at the riskless rate.
3. Borrowing portfolios: when the % of portfolio invested in riskless security is negative, i.e.  $W_f < 0$ . This is because; additional funds are borrowed at  $r_f$  and invested in the risky portfolio.
4. Stock plotting off the SML provides the evidence of mis-pricing in the market. In reality there is always bound to be some mis-pricing because of presence of transaction cost, taxes and information asymmetry. Therefore, in practice, the SML is a band instead of a thin line.
5. Tax factor =  $(T_d - T_g) / (1 - T_g)$ ; where  $T_d$  = Tax rate on dividend;  $T_g$  = Tax rate on capital gain. From the above equation, if tax rate on dividend yield is less than tax rate on capital gains, tax factor is negative. When tax factor is positive, investors in higher tax brackets will prefer to hold a higher percentage of low-yield high capital gains stocks to maximize their post-tax return and expected pre-tax return will be an increasing function of the dividend yield. When tax factor is negative, vice versa. Investors in tax brackets, where marginal tax rate is not significantly different from capital gain tax rate may prefer to hold high-yield stocks.
6. The mathematical expression for calculating the number of inputs of information required for an 'n' asset portfolio according to Markowitz model. The data needs n expected return, n variance of return and  $n(n - 1)/2$  unique covariance of returns.  
Hence total inputs required =  $n + n + n(n - 1)/2 = n(n+3)/2$
7. Portfolio management is a specialized activity which starts with identifying the preference of the investor and goes on further into close monitoring the market conditions and finally making necessary changes to the portfolio so as to provide the investor with the returns expected by him.
8. Setting investment objectives
  - a. Finding the motivation to trade  
According to Jack Treynor, key motives for trading are value, information and cash flow. Value traders are rarely timely i.e. only on a few occasions. The value traders can use time according to their convenience so that by extending the time of trading, they can reduce the cost of trading. Thus they are less sensitive to time, compared to price. As information is liable to be spread across the market rapidly, it loses value soon. Hence, information traders tend to be more sensitive to time.
  - b. Predicting market conditions and stock's liquidity
  - c. Establishing trading strategies
  - d. Trade information
  - e. Flexibility
  - f. Appraise effectiveness when the trading is complete
9. The life cycle model describes the stages in life as accumulation phase, consolidation phase, spending phase and gifting phase. The model further assumes that the risk tolerance of the individual and his investible surplus do not remain constant and the preference of the investor keeps changing during the different life stages of the investor.
  - a. During the accumulation phase, investors' net worth is low and they have more immediate needs. Long-term goals would be to provide for retirement and their children's education, and short-term goals to pay for a house and car. They seek high risk, high return investments.
  - b. Net worth is increasing during the consolidation phase and income exceeds expenses. Long-term goal would be to provide for retirement, while short-term goals include paying for children's education and vacations. Capital gains are balanced with some low risk assets.

- c. During the spending and gifting phases investors seek more protection as their earnings years have concluded. Long-term goals would be estate planning, and short-term goals include lifestyle needs and gifts. They seek low risk, low return investments.

**Figure 5: Lifecycle of investor**



10. Investment management process can be broken into two steps (i) information process and (ii) implementation process. The former deals with the selection of the stocks, whereas the latter deals with the proper execution of investment ideas and maintaining the values of the stocks. The proper mix of these two processes leads to a well-defined investment process.
11. Classical decision-making theory revolves around three assumptions: Asset integration, risk aversion, and rational expectation. Asset integration implies that between two prospective investments, a choice is made based on comparison of distributions that result from the integration of these two with the rest of the assets. Risk aversion implies that people prefer less risk for the same expected return. Rational expectations imply that people take rational decisions and their decisions are based on unbiased forecasts. In other words, in the absence of insider information, all investors have a unanimous opinion on the future value of any security.
12. The key drivers of the investment policies of institutional investors are:
  - a. Asset-Liability Matching
  - b. Regulatory and Legal Considerations
  - c. Tax considerations
  - d. Liquidity Needs
  - e. Unique Needs, Circumstance and Preferences
13. The real need for liquidity fall in five different categories
  - a. Emergency Cash
  - b. Goal spending
  - c. Income taxes
  - d. Estate transfer taxes
  - e. Investment flexibility
14. Interest-free loan is not actually a liability but a special kind of valuable asset.
15. The range of objectives and constraints that are found in reality are more complex and call for a person of intelligence, knowledge and experience to handle them.

## 16. Type of asset allocation

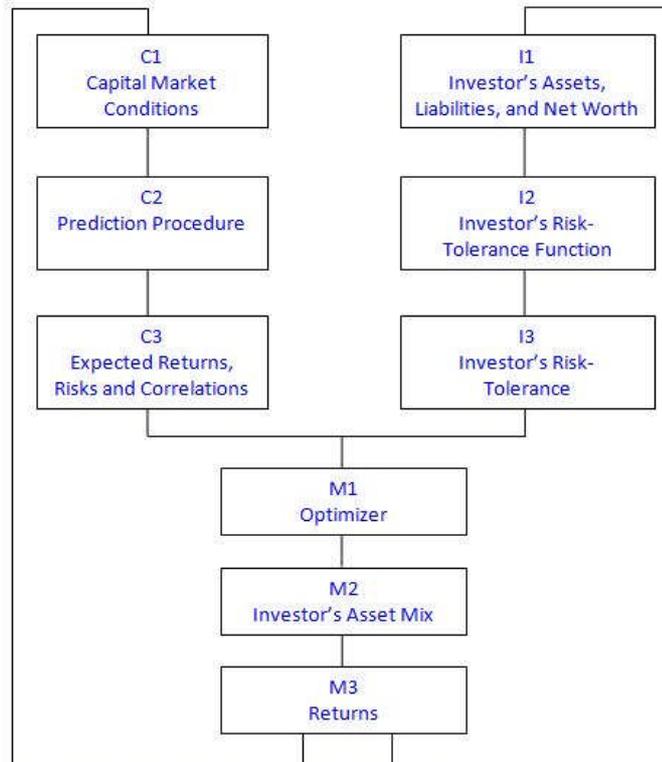
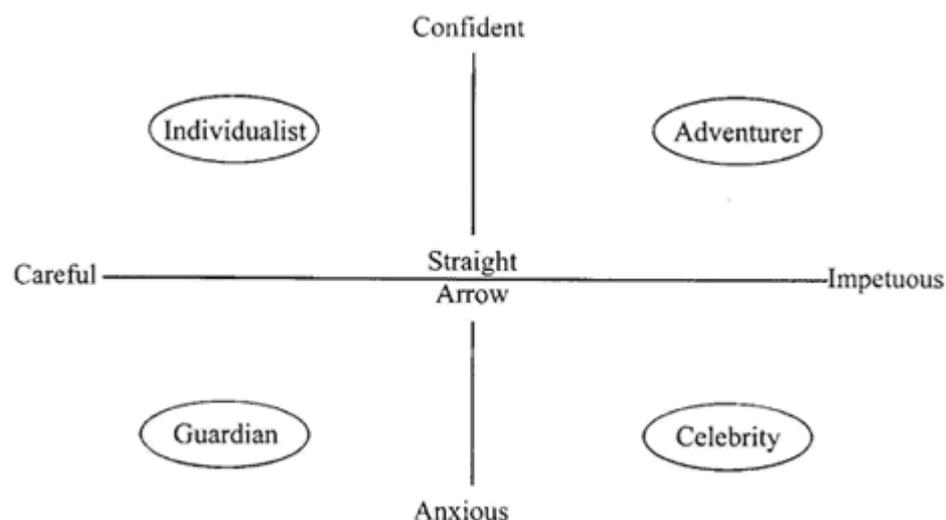


Fig: Manoj Banshilal Pachouri, Source: ICAFI

- a. Strategic asset allocation (policy asset allocation analysis): carried out at regular intervals time gap. The correlation inputs of risk and return are long run strategic inputs and are not affected by the short run changes in market conditions. This process uses Monte Carlo simulation to find the outcomes of each asset mix. Strategic asset allocation indicates an optimal asset mix to be held under normal conditions.
  - b. Tactical asset allocation: routine activity performed as a part of continuing asset management. It considers that an individual's risk tolerance is unaffected by changes in his circumstances. It takes into consideration the changes in expected return, risks as well as correlations.
  - c. Insured Asset Allocation: it is also carried on in a routine and timely manner. It is aimed at achieving the objectives of the investor without depending on market timing. The minimum value of the net worth or asset value is called the floor. Above the floor, higher the value, higher is the allocation to risky assets.
17. Dynamic strategies for Strategic Asset allocation
- a. Buy-and-hold
  - b. Constant mix: maintain an exposure to stocks that is in constant proportion of their wealth.
  - c. Constant proportion portfolio insurance: it is a constant proportion strategy with multiplier greater than one.
  - d.  $\text{Amount in stocks} = m (\text{Assets} - \text{Floor})$       Where,  $m = \text{fixed multiplier}$
  - e. The strategies that involve buying of stocks as their prices fall and selling them when their prices rise results in a concave pay-off curves.
  - f. Option-based portfolio insurance: mixed income securities are debt obligations include bonds, mortgage-backed securities, asset-backed securities and bank loans.
18. Systematic Asset Allocation Process: It depends on three assumptions.
- a. The markets provide explicit information about the available returns.
  - b. The relative expected returns reflect consensus.
  - c. Expected returns provide clues to actual returns.

19. Risk tolerance and risk penalty
- The risk penalty is higher for smaller values of risk tolerance and higher values of variance of asset mix.
  - Higher the risk penalty, lower the utility of the return for the investor.
  - For risk loving investors, risk tolerance is high and risk penalty is low resulting in high utility.
20. Risk penalty = Total Risk / Risk tolerance ; Total Risk = variance ( $\sigma^2$ ) of the security
21. Barnewall two-way model: Marilyn Macgruder Barnewall developed a useful model of passive and active individual investors.
- Passive investors became wealthy passively, either by inheritance, or by risking others capital. They have a greater need for security than a tolerance for risk. Passive investors make the best clients – they tend to delegate and trust their advisor to do a good job. They are risk averse and require broadly diversified portfolios.
  - Active investors earned their own wealth by being actively involved in their wealth creation or by risking their own capital. They have a higher tolerance for risk than a need for security. Active investors make more challenging clients –they are personally involved and think they know more than their advisors do. Because of their willingness to take risk, they are more likely to prefer focused strategies.
22. Bieland, Biehl and Kaiser five-way model classifies investors into five categories:
- Individualists – They are confident and careful. They generally do not go to a consultant to manage their investments but do it by themselves.
  - Adventurers – Adventurers generally go for only big bets. They have the resources to do so and are willing to take risks. The investment made by this type of investors are generally focused and not diversified.
  - Celebrities – Celebrities are those that are swayed too much by the trend and do not have any expertise or opinion about investments. However, not having the expertise and the confidence required to manage the portfolio on their own, they approach investment managers frequently.
  - Guardians – Guardians are both anxious and careful. Lacking confidence in themselves, they approach investment counsels. They generally emphasize on safety of the capital while making the investments and a significant proportion of their investments is generally devoted to government securities and guaranteed return investments.
  - Straight arrows – These are halfway between complete confidence and anxiety, and extreme carefulness and impetuosity. They can be aptly described as the average investors. While those exactly in the middle are potential clients for portfolio managers, those who are significantly towards impetuosity or confidence are not.



23. Kathleen Gurney's nine personalities

- a. **ACHIEVERS:** These are the second-highest income earners, usually college graduates and mostly married. They feel work; diligence and effort will pay off better than anything else. They are proud of their accomplishments, but tend to distrust others' honesty with money. They are conservative and not interested in risking assets they have worked hard to accumulate. Protection is a primary consideration. Being take-charge types, they have a strong need to control their money.
- b. **ENTREPRENEURS:** The most male-dominated profile, driven by a passion for excellence and commitment, which helps them achieve their goals. Despite being the highest income earners, they are workaholics who are not motivated by money alone (it is used as a scorecard to measure their achievements). They enjoy the power and prestige money brings. They are proud and reward themselves with the best cars, homes, wines, etc. Investing in the stock market is their favoured strategy.
- c. **HIGH ROLLERS:** Money presents infinite possibilities. They are thrill seekers who enjoy the ride of financial risk but are only mildly interested in where it takes them. They seek power. Money brings them instant power and recognition. They are creative, extroverted, and competitive. They work hard and play hard; for them, money is an emotional release. They prefer to risk their assets rather than sit back bored by financial security. If they do not learn how to manage their styles, they end up with low pride and contentment.
- d. **HUNTERS:** Usually highly educated, with a live-for-today financial style. They are often women and average- to above-average income earners who make purchasing decisions with their hearts, not with their heads. They use impulsive spending as a way they reward themselves. They have a strong work ethic, like the Entrepreneurs, but lack the Entrepreneurs' confidence. They attribute success to luck rather than ability and judgment. Once they understand their traits, they can make dramatic financial progress.
- e. **MONEY MASTERS:** They balance their finances with the degree of contentment and security they derive from their money. They are the No. 1 wealth accumulators even though they don't necessarily earn the most. They rank first in degree of desired involvement with their money and enjoy participation. They trust the recommendations of others and act on sound advice. Pure luck has little chance here. Success through determination is their philosophy.
- f. **PERFECTIONISTS:** They are so afraid of making a mistake that they often avoid making a decision. They forever try harder, but lack self-esteem, especially about their money. They have the least pride in handling financial matters. They have tunnel vision, consider every angle and find fault with the potential of practically any risk venture. Finding suitable investments is difficult for them.
- g. **PRODUCERS:** They rank high in work ethic but lower in earned income due to lack of self confidence in money management skills. This leads to some real frustrations: They work hard, desire more and feel they have difficulty getting ahead financially. Financial investment/education can be very rewarding since they often don't understand how the money system works. They do not evaluate risks carefully and rarely profit from them. They lack confidence in making financial decisions.
- h. **OPTIMISTS:** These are the people to whom money has brought peace of mind. They have the fewest anxieties and tend to be proud and content. They are the least reflective, and their money decisions are somewhat impulsive but not risk-oriented. Often in or near retirement, they are more interested in enjoying their money than making it grow. They are not highly involved with their money, taxes or investments, which could cause them stress and impinge on their enjoyment.
- i. **SAFETY PLAYERS:** They score the lowest in self determination. They are average earners, and most of their money goes into safe and secure investments. They lack the confidence and motivation to reap more growth by taking more calculated risk (even though well educated). They take the path

of least resistance, feel they are doing just fine, and repeat whatever investment strategies seemed to work for them before.

24. Psychonomic Investor Profiler – Jonathan Myers

Based on the assumption that individuals will treat different aspects of their life in the same way, the six investor types are:

- a. Cautious - very conservative, this investor has a need for financial security and will avoid high-risk ventures as well as listening to professional advice, preferring to conduct their own financial affairs. They don't like to lose even small amounts of money and never rush into investments, always giving financial opportunities a great deal of thought.
  - b. Emotional - easily attracted to fashionable investments or 'hot' tips, these investors act with their heart and not their head. A whim or a gut feeling leads their decisions, and they have great difficulty disengaging from poor investments or cutting losses. They have an unreasonable belief that things will come right in the end and often put their trust in luck or 'providence' to safeguard their financial assets.
  - c. Technical - hard facts - numbers - lead this type of investor to active trading based on price movements. They are screen-watchers, sometimes obsessive, but their diligence can be rewarded if they spot trends. They may also have a tendency to 'need' and buy the latest technology as they are always looking for some edge.
  - d. Busy - these investors need to be involved with the markets, it gives them a buzz when they check the latest price movements, which may be several times a day. They have to keep buying and selling - on rumors, on overheard gossip, from the mass of newspapers and magazines they collect. Any tidbit of information they can glean is imbued with significance and a cause to take financial action.
  - e. Casual - a laid-back attitude to investment, these individuals are often hardworking and involved with work or family. They tend to believe that once an investment is made it will take care of itself, and that a good job or a profession is the way to make real money. They easily forget that they own investment assets and rarely check on their financial affairs. And, though they may leave the running of their investments to professional advisors, they haven't been in contact with them for years.
  - f. Informed - uses information from a variety of sources and keeps an ongoing watch on their investments, the markets and the economy. They listen carefully to financial opinions and expert assessments, and will only go against market fashion, as a contrarian, after weighing up all the pros and cons. They are financially confident and have faith in their decisions, knowing that knowledge and experience will always win out to give them long-term profits.
25. Behavioral Asset Pricing theory states that the market is made up of two groups of traders, One, the information traders and the other, the noise traders. Information traders are those who fall in the standard CAPM. They are free from cognitive errors and have mean variance preference.
26. Investment objectives of the institutional investors
- a. Stability of principal
  - b. Income
  - c. Growth of income
  - d. Capital appreciation
27. A specialist fund manager makes decision after a careful observation of the selected stock price movements where as a balanced manager is more concerned with and responsible for generating an even cash flow for the investment management firm.
28. Four basic styles of management behaviour
- a. Directive: they have a tendency to make decisions very fast after taking the accessible facts into account. They will always give top priority to finish their jobs as quickly as possible as they are taskmasters. They attempt to collect the resources as fast as possible to accomplish the specific goal. Such individuals endorse horizontal decision-making pattern and wish to maintain a firm grip over

the entire decision making process. They do not make trend analysis and this may lack in long-term planning.

- b. Analytic: they have a tendency to find out the most appropriate solutions to problems as they always gather the related information to attain the required goal. They observe the facts from the practical perspective and try to incorporate the known facts in a rational layout.
  - c. Conceptual: they try to find out solutions that are beyond the best possible solutions. In fact, they strive for something like an undisputed accuracy. They are very intuitive in their decision making process and try to search for several alternative possibilities.
  - d. Behavioral: they try to consult others while making any decisions and try to detect common thread among the people that binds them together.
29. The unique features of small capitalization stocks are:
- a. Dividend yield is below the market average
  - b. Betas are above market average
  - c. High residual risks.
30. Types of pension plans
- a. Defined-Benefit Plans: promise to pay a definite level of pension.
  - b. Defined Contribution plans: contributions made by employer or employee or both.
  - c. Designer (Hybrid) pension plans
31. Objectives of diversification in pension funds is to:
- a. Reduce the variability of the fund's total return.
  - b. Reduce the exposure to any single component of the capital market.
  - c. Reduce the risk of returns not tracking or exceeding inflation; and
  - d. Increase the longer-term risk-adjusted return potential of the fund.
32. Tenure Risk: the investment tenure of the pension fund is about 20 to 30 years depending on the nature of the liabilities. The Indian financial market has no financial asset with such a long maturity, except for equity.
33. Real wage growth risk: pensions would grow with increase in real wages, which may broadly move in line with gains in productivity.
34. Fiduciary: Using discretion in administering and managing a plan or controlling the plan's assets makes that person a fiduciary to the extent of that discretion or control.
35. Endowment Fund: it is a unique fund wherein the principal is intended for investment and the interest earned on it is spent as directed by the owner.
- a. True Endowments: received from external donors with the restriction that the principal or gift amount is to be retained in perpetuity and cannot be spent.
  - b. Term Endowment: principal may be expended only after the expiration of a stated period of time or occurrence of a specified event depending on donor wishes.
  - c. Quasi Endowments
36. Asset-Liability Management (ALM) techniques used in Insurance Industry
- a. Testing of Cash Flows: The National Association of Insurance Commissioners (NAIC) of the US started Cash Flow Testing (CFT) in 1993. An actuary is supposed to test the possible effects of seven different interest rate scenarios.
  - b. Matching of Cash Flows
  - c. Portfolio Immunization
  - d. Dynamic Financial Analysis
37. Catastrophe (CAT) bonds: these are insurance-linked bonds which are one class of securities that provide reinsurers access to the capital markets (two others are contingent surplus notes and catastrophe equity plus). These can be used to transfer the risks of the insurance industry to the capital markets.
38. Any investment income, which has not previously borne UK corporation tax is called 'unfranked investment income' and will be liable to corporation tax in the normal way.

39. Techniques for short-term forecasts of the economy
  - a. Leading indicator approach
  - b. Liquidity/Flow of Funds approach
  - c. Econometric approach: This approach tries to describe the present economic condition as a function of certain policies and variables and the economic relationship attached to these variables. The important economic variables used in this model are the amount of money supply in the system, government spending, and government tax policies.
  - d. Time series analysis approach
40. Advantages of using econometric Models
  - a. Testing of hypothesis and idea of an economic indicator. Examples: Test to know how low interest rates stimulate growth and whether wages can be used as a predictor of inflation.
  - b. Estimating sensitivities. Example: Would one percentage point rise in the US Consumer Price Index typically translate into a-year bond yield?
  - c. Developing internally consistent forecasts. Example: When researchers are using a judgmental approach, they may fail to see that something they are implying about income growth does not jibe with their assumption on employment growth.
  - d. Running simulation of complex scenario. Example: A government economist may need to find out what happens if interest rates and government spending are both cut.
41. Problems in the Use of econometric Models: The main problem in using the models is the lack of consistency of the data. Investment professionals should be aware of this before any decision is taken based on these models. Other problems that arise in these models are:
  - a. Implausible Result: A number of variables used to isolate one may cause an implausible result. If any of the variables among them is working then the prediction might be quite unreliable.
  - b. Statistical VS. Real World: The other problem is the difference in the statistical result and the result in the real world.
  - c. Error in the Underlying Data: Past data used may be good predictors of some variable but in certain cases where variables are subject to huge revision they create problems when using models.
  - d. Assumption: Assumption is the most vital problem in using models. It is not possible to predict every variable, so every model has some assumptions. So it is suggested to be careful while using assumptions.
  - e. Structural Changes: Most of the models assume that past relationships have some, validity in predicting future relationships but this prediction may not be significant where fundamental structure changes due to rapidly changing economies.
  - f. Simultaneity: Simultaneity is the term used to measure the influence of one variable on another when that second variable also influences the first one. These occurrences can create confusion in using statistical models.
  - g. Time Series Data: The time series data i.e., the data that frequently changes due to some economic factors like population growth, GDP growth sometimes- have a number of problems. These data may violate some assumptions due to their, trend properties.
42. Diversification is the strategy of combining distinct asset classes in a portfolio in order to reduce overall portfolio risk.
43. Factors affection the client to change the portfolio composition
  - a. Change in wealth
  - b. Change time horizon
  - c. Changes in liquidity needs
  - d. Changes in taxes
  - e. Bull and bear markets
  - f. The Central bank policy
  - g. Inflation rate changes
  - h. Changing return prospects

44. Portfolio revision techniques using formula plans
  - a. Constant Dollar Value Plan: The value of the aggressive portfolio should remain constant and any change in the value should be adjusted by shifting funds from conservative portfolio.
  - b. Constant Ratio Plan: the aggressive portfolio is maintained at a fixed ratio of the conservative portfolio.
  - c. Variable Ratio Plan: the ratio of the aggressive portfolio to the conservative portfolio changes with change in the value of the aggressive portfolio. As can be expected, the ratio will decrease when there is an increase in the value of the portfolio and vice-a-versa.
  - d. Dollar Cost Averaging: this plan is technically not a formula plan as it depends on the periodicity of the investment, rather than on a combination of different kinds of portfolios and changes in them. This plan forces the investors to take decisions that they may otherwise be unwilling to take. The decision is of making investments periodically.
45. Passive Equity Investing
  - a. Index funds
  - b. Customized funds
  - c. Factor/Style funds: replicates the performance of a given common stock factor such as growth, small capitalization, or high-yield.
46. Active Management Strategies
  - a. Top-Down: emphasis is on sector, industry, or theme-based.
  - b. Bottom-Up: emphasis is on selective attractive securities.
47. Macroeconomic Factor Models
  - a. Risk Attribute Model (RAM) by Saloman Brothers
  - b. Burmeister, Ibbotsom, Roll and Ross(BIRR) model
48. RAM model of Solomon Brothers: the following six macroeconomic factors are used:
  - a. Economic growth: The monthly change in industrial production is used, which is measured concurrently with stock returns.
  - b. Business cycle: The factor representing the stage of the business cycle is taken as the difference between the yield on top rated corporate bonds of a 20-year maturity and the 20-year Treasury bonds. The spread between the two falls during economic booms and rises during economic recessions.
  - c. Long-term interest rates: The change in the ten-year Treasury yields is taken. This represents the change in relative attractiveness of the financial assets and may cause investors to change the portfolio mix.
  - d. Short-term interest rates: The change in the 1-month Treasury bill rate is taken.
  - e. Inflation shock: The difference between the expected inflation and the actual inflation is taken. The expected inflation is estimated based on another model developed by the proponents of this model.
  - f. Value of the currency: The change in value of the domestic currency is taken, as measured by a trade-weighted basket of currencies.

Apart from these six main factors, there is another factor considered. It is a residual factor, called 'residual market beta' by the proponents of this model. The factor is intended to capture the other macroeconomic factors remaining after considering the above six.
49. The various factors considered by Burmeister, Ibbotson, Roll and Ross (BIRR) macroeconomic factor model (BIRR model) are
  - a. investor confidence (Confidence risk),
  - b. interest rates (Time horizon risk),
  - c. inflation(Inflation risk),
  - d. real business activity (Business cycle risk)
  - e. market index (Market timing risk)
50. Fundamental Factor Models
  - a. BARRA E2 factor model
  - b. Wilshire Atlas factor model

- c. Goldman Sachs Asset Management (GSAM) factor model
- 51. Goldman Sachs Asset Management factor model uses the following three measures.
  - a. Value
  - b. Growth and momentum
  - c. Risk

52. The factors used in Goldman Sachs Asset Management model are

Value	Growth and Momentum	Risk
i. Book/Price	i. Estimate revisions	iv. Beta
ii. Retained EPS/Price	ii. Price momentum	v. Residual risk
iii. EBITD/Enterprise value	iii. Sustainable growth	vi. Disappointment risk

53. Fixed Income Portfolio Management Strategies

- a. Passive Management
    - I. Buy-and-hold
    - II. Indexing
  - b. Semi-Active Management
    - I. Dedication: objective is to create and maintain a bond portfolio that has a cash flow structure that exactly or closely matches the cash flow structure of a stream of current and future liabilities that must be paid.
    - II. Immunization
  - c. Active Management
    - I. Rate anticipation
    - II. Bond Swaps
54. Bond laddering is a type of buy-and-hold passive strategy because it involves investing in bonds with several maturity dates to minimize fluctuations in the current level of income. Normally, no intermediate revision takes place.
55. Tracking error: The difference between the performance of the managed portfolio and the performance of the benchmark index. It is the standard deviation of the portfolio's active return.
56. Active Return = Portfolio's return – Benchmark index return
57. It can be caused by
- a. Transaction costs in construction of the index.
  - b. Differences in the composition of the indexed portfolio and the index itself.
  - c. Discrepancies between prices used by the organization constructing the index and transaction prices paid by the index manager.
58. Tracking error risk: The risk is said to occur when the tracking error is negative, i.e., the return on the managed portfolio is less than the return on the benchmark index.
59. Three popular methods of constructing a bond portfolio to replicate an index are:
- a. The stratified sampling or cell-matching technique
  - b. The optimization approach: optimization function can be optimization of yield, maximization of convexity or maximization of expected total return.
  - c. The variance minimization approach
60. Bond Swaps: investors sells a bond and exchanges it with another in order to increase the current yield, quality or liquidity of their portfolio. There are two types of bond swaps –
- a. Substitution Swap: securities are similar in all respects except that the bond purchased has higher promised yield to maturity than the existing bond.
  - b. Pure Yield Pickup Swap: investor seeks to increase the portfolio's yield to maturity by swapping out of a lower yield bond into a higher yield bond.
61. Conditions for immunization:
- a. The present value of the liabilities should be equal to the present value of assets.
  - b. The duration of the assets should be equal to the duration of the liabilities.

- c. The convexity of assets in the portfolio should be greater than the convexity of the liabilities.
62. Portfolio strategies using index futures
    - a. Asset Allocation: optimal placement of the portfolio money in various financial instruments to suit the needs of individual investors.
    - b. Yield enhancement
    - c. Modification of portfolio risk
    - d. Futures as a substitute for indexing
    - e. Hedging
  63. Portfolio Insurance: asymmetric protection of the portfolio so that its value will be guaranteed not to fall under a floor value when the market goes down while it will be free to appreciate when the market goes up. It is of types – Static and Dynamic.
  64. Interest rate futures: price of interest rate futures and rate of interest rate are inversely related. Buy a long-term bond, if interest rates are expected to decline and short the bond if vice-a-versa.
  65. Types of private equity
    - a. Venture Capital
    - b. Corporate finance
    - c. Mezzanine finance
    - d. Distressed debt: providers of debt are k/a 'Vulture Capitalists'
  66. Hedge Funds – page 419 of Portfolio Management book of ICFAI Press
  67. Real Estate Investment Trusts (REITs): REITs can pave the way for retail investors to take share in the growing real estate market, as it is proposed to be on the lines of mutual funds and the minimum investment required for investing in the units of REITs is small. As units of REITs are proposed to be listed on stock exchanges, there is liquidity available on ongoing basis which is not the case with the underlying real estate property. Moreover, investors can enjoy the benefits of intermediary cash flows and capital appreciation. This is because, as per the SEBI draft guidelines, REITs shall distribute at least 90% of the net income generated out of operations to unit holders.
  68. Value at Risk (VAR) is a statistical measure of the maximum potential loss from uncertain events in the normal business over a particular time horizon. It is measured in units of currency through a probability level. It is the loss measurement consistent with a confidence limit such as 99%, on a probability distribution (usually a normal distribution), implying that this is the measurement of a loss which has a chance of only 1% of being exceeded.
  69. Important parameters for calculation of VAR:
    - a. Time horizon
    - b. Confidence interval
    - c. Data series
    - d. Mapping /Selecting relevant risk factors
  70. Approaches to computing VAR
    - a. Variance-covariance approach
    - b. Historical simulation approach
    - c. Monte Carlo simulation approach
  71. Measures of Return
    - a. Money-Weighted Rate of Return (MWROR): it is simply the IRR over that period. Two factors affecting the MWROR are the beginning and the ending market values and the timing of the net contributions to the fund.
    - b. Time-Weighted Rate of Return (TWROR): it seeks to eliminate the distorting effect of cash flows so that more valid comparisons of fund manager's investment skills can be made.
    - c. Linked Internal Rate of Return (LIROR): the inflows to and outflows from a fund are spaced across the time when one is dealing with the fund of an individual investor.

72. Information Ratio (IR) = (Portfolio alpha) / (Residual risk)

The main characteristics of the information ratio are as follows:

- a. The information ratio estimates ex-post value added and relates this to ex-ante opportunity available in the future.
- b. The residual frontier that describes the opportunities accessible to the active manager is identified by the information ratio.
- c. The level of aggressiveness for each manager is decided by his/her information ratio.
- d. Sometimes intuition can give a good clue about the information ratio and residual risk aversion.
- e. Value added depends on the managers' prospects and aggressiveness.

73. Dietz Method

$$R_i = \{[(P_i - 0.5 C_i) / (P_o + 0.5 C_i)] - 1\} \times 100$$

Where;  $P_o$  = value of portfolio at beginning of period

$P_i$  = value of portfolio at the end of period

$C_i$  = Net contribution during the period

$R_i$  = Rate of return of portfolio