

Unit-3. Stock Selection and Portfolio Construction

MEANING OF STOCK SELECTION

It refers to purchasing stocks based on its strengths or certain criteria such as its risk, return, performance, growth, capital appreciation etc.

STOCK SELECTION PROCESS

A. Fundamental Analysis Fundamental analysis uses different factors such as the current economic environment and finances of the company to estimate its stock value. While doing fundamental analysis the goal of investor is to look at how different factors affect performance at each of the specific level being analyzed. The various approaches to stock selection are:

1. Top-Down Approach of Stock Selection

The Top Down approach for fundamental analysis means beginning the analysis to Global Macroeconomic level right from the start, moving to consecutive narrower economic levels until it reaches the individual business. The factors to be focused while doing top down approach of fundamental analysis are:

a) Economy: Beginning at the global level may turn the focus on how the majority of economies across the world are doing. Analyzing the local economy like fluctuations in currencies, employment rate, government taxation structure and stimulus for various sectors can affect the stock performance.

b) Sector Level: After taking a look and narrowing down to a local economy that is doing well, an investor needs to analyze and take a look at how specific sectors may be doing. An example of a sector would be the Technology Sector, Financial Service Sector etc.

c) Industry Level: Taking one step further, once a sector is targeted, the next step the investor needs to follow is to take a look at the sector to which industry may be doing better than others and their outlook. An example of an industry within the "Technology Sector" would be "Consulting and Outsourcing Services".

d) Specific Company Level: Once an investor has narrowed down to a possible industry, he needs to look at potential individual businesses within that industry. An example of an individual business within the "Consulting and Outsourcing Services" industry would be "Infosys". The financial information about the company can be analyzed by reading annual report of a company.

An investor or his analysts should be able to read and understand the following financial statements:

- **Income Statement:** It is a statement of estimation of the income of a specific time determining Net Sales and each kind of investment or expenditures" The significant of this statement could be defined as it provides investors clear-cut information about company's net income, by comparing total revenues with expenditures and also navigates profitability to loss ratio.

Net Income (Revenue+ Gains) (Expenses + Losses)

Investors and analysts usually consider its presented information a base of investment plan after knowing how frequently the rise in income statement occurs, which indirectly shows the company's durational fluctuations.

- **Balance Sheet:** A balance sheet provide information about business's financial situation by clearly disclosing what the business has as assets and where its debts come from it is noteworthy that each shareholder identifies how to apply, probe and understand a balance sheet statement. It may provide residing information or logic to spend in charts Assets= Liabilities + Equity

It's an important statement that beats other financial accounts because it retains maximum information.

- **Statement of Cash Flow:** An investor should be able to analyze die cash flow of s company. A cash flow statement is equally important as an income statement in a list of financial statements, plainly describing stock production and its application classified under distinctive actions." Among the format of financial statements, the cash flow's one is extremely important to understand as it doesn't involve any estimation formalms. Its format doesn't involve distinctive figures involved in financial planning. It only involves three types of activities:

1. Operating Activities: These are business operations that cover manufacturing and the company's scalability events. The operational company ventures incorporate directory events, dividend pays, tax returns, salaries to workers and cash for business rental existence. This section only focuses on income boosting segments and doesn't discuss debts or liabilities.

2. Investing Activities: The secondary division on the cash flow report shows the profits and losses made because of speculation in fixed assets, including property, plant, or equipment (PPE) hence indicating a complete transformation in the capital state for a business.

3. Financing Activities: The last segment on the cash flow report shows the call how within the business, its proprietors and lenders. Economic actions involve activities including liability, investment and interests. In these events, generated capital is listed when the property is grown and outgoing stock is registered when shares are given.

- **Statement of Change in Equity:** Statement of Changes in Equity leads to the reunion of the available and closing profits of investment in a business through a selective recounting time. It describes linking between a business income statement and balance sheet. Further, it combines the activities not included in these two economic declaration including dividend cash, investment removal, financial strategies modifications changes of previous time-lapses, etc.

Opening Balance of Equity + Net Income - Dividends +/- Other Changes = Closing Balance of Equity

It majorly helps to declare dividend payments by combining other types of financial accounts

- **Statement of Shareholder's Equity:** Statement of shareholders' equity describes the variations in the rate of shareholders' ownership or tenancy investment in a business from the opening of a financial time to its termination. It provides shareholders extra clarity around the advances in ownership records and details the company actions that commit to the progress in estimating shareholders' equity.

The financial statements can be analyzed using various tools like ratio analysis through which one can understand the Price to Earnings Ratio (P/E ratio), Earnings Per Share (EPS), Price/Earnings to Growth Ratio, Price to Book Value, Return on Equity (ROE) and Return on Capital Employed (ROCE).

2. Bottom-Up Approach of Stock Selection

Under this method of analysis the investors focus on micro economic factors initially and later they look at the individual company's or industry performance and economy related factors effecting that business.

- **Specific Company Level:** The investor chooses the company or firm that is consistently given good returns to investors. These companies usually will be top companies in any particular sector. One way is to do look at the company's financial information found on financial statements and coming up with some type of valuation.

- **Industry Level:** The next step is to take a look at industry to which the business belongs to. The investors need to analyze micro or macro environmental factors effecting the industry to which the firm belong to.
- **Sector Level:** After analyzing the industry the next step is to analyze the specific sector to which the company belong to. The various factors like taxation policy, industrial policy etc. will affect stock performance in different sectors.
- **Economy:** The last step is to analyze the way majority of economies across the world are performing Analyzing the local economy like fluctuations in currencies, employment rate, government taxation structure and stimulus for various sectors can affect the stock performance.

B. Technical Analysis

The technical analysis method involves examining data generated through market activities. such as volume and prices. The nature of technical analysis is more probabilistic in nature rather than prediction. A core principle of technical analysis is that a market's price reflects all relevant information impacting that market. A technical analyst therefore looks at the history of a security or commodity's trading pattern rather than external drivers such as economic, fundamental and news events

Investors following such a type of stock analysis use technical indicators and tools like charts and oscillators to identify patterns that can indicate future price trends or direction. The historical trading data of a security is analyzed and the investors or their analysts estimate the future move of the security.

The field of technical analysis is based on three assumptions:

a) **The Market Discounts Everything:** A major criticism about technical analysis is that it only considers price movement, ignoring the fundamental factors of the company. However, technical analysis assumes that, at any given time, a stock's price reflects everything that has or could affect the company - including fundamental factors. Technical analysts believe that the company's fundamentals, along with broader economic factors and market psychology are all priced into the stock, removing the need to actually consider these factors separately. This only leaves the analysis of price movement, which technical theory views as a product of the supply and demand for a particular stock in the market.

b) **Price Moves in Trends:** In technical analysis, price movements are believed to follow trends. This means that after a trend has been established, the future price movement is

more likely to be in the same direction as the trend than to be against it. Most technical trading strategies are based on this assumption. μ rix e movements.

C) History Tends To Repeat Itself: Another important idea in technical analysis is that history tends to repeat itself, mainly in terms of price movement. The repetitive nature of price movements is attributed to market psychology; in other words, market participants tend to provide a consistent reaction to similar market stimuli over time. Technical analysis uses chart patterns to analyze market movements and understand trends. Although many of these charts have been used for more than 100 years, they are still believed to be relevant because they illustrate patterns in price movements that often repeat themselves.

Technical Analysis Tools

Technical analysis tools are used by traders to gain insight into the supply and demand of securities and market psychology. Together, these tools form the basis of technical analysis.

Some of these important tools are discussed below:

- **Chart Patterns:** Using trend lines, technical analysts draw triangles and other geometric shapes on price charts. If the price of stocks trade within one of these patterns, detailed statistical analysis has been performed that suggests certain patterns will break in one direction over another, providing traders who spot such patterns in advantage in the market Common bullish price patterns include ascending triangles, falling wedges, inverse head and shoulders and more. Bearish price patterns include descending triangles, rising wedges, double tops and head and shoulders patterns.

Various forms of charts are used by the experts to analyses the price movements like Chart, Japanese Candlesticks, Helkin Ashi. Line chart etc. The most commonly used chart is Japanese candlesticks. These were introduced to assist technical analysts and traders in tipped off of upcoming price movements. Depending on how a candlestick opens, closes and price action within each candle they form particular shape or pattern. These shapes or patterns of candlesticks can also be used to predict future price movements. A Doji, for example, a type of candlestick pattern that often tells analysts that there is indecision in the market and trend change could soon occur.

While candlesticks aren't always effective in and of themselves, combining the analyse candlesticks with chart patterns, moving averages, trading volume and more can have a dramatic effect on increasing a trader's success rates.

- **Trend Lines:** Trend lines are lines drawn on a price chart of a stock, just under or over the stocks loc pivot highs or lows, to indicate that price is following a particular direction. These lines exist based on the natural placement of buy or sell orders by market participants and the raising or lowering of stop loss levels, or where natural profit-taking may occur.

A trend line typically is required to have multiple touches to be considered valid and trades are recommended to watch for a break and close above or below trend lines, before taking any action. However, trend lines can also be used to help a trader make a decision based on whether a trend line is broken or trend continues.

- **Moving averages:** are an indicator layered over price charts that represents the average price of an asset across a certain time period. Moving averages can be short or long-term, across daily, weekly, or even longer timeframes. Investors and traders typically use moving averages not only to find levels that may act as support or resistance but to understand if a trend in an asset class is changing. When short term moving averages cross below or above a longer-term moving average, the event is called either a death cross or golden cross, named for the corresponding price action that typically follows. Death crosses are bearish and often indicate that the asset will soon fall into a downtrend, while golden crosses are bullish and represent the wealth that investors are likely to generate from the trend that follows such an occurrence.

Fundamental Analysis

Fundamental analysis is a method of evaluating a security or asset by attempting to measure its intrinsic value by examining related economic, financial and other qualitative and quantitative factors.

Fundamental analysts attempt to study everything that can affect the security's value, including macroeconomic factors (like the overall economy and industry conditions) and individually specific factors.

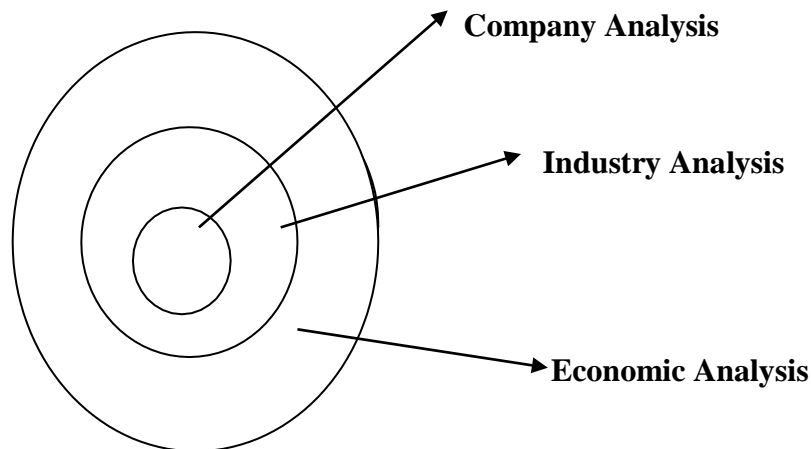
Objectives of Fundamental Analysis

1. To conduct a company's stock valuation and predict its probable price evolution
2. To make a projection on its business performance
3. To evaluate its management and make internal business decisions.
4. To calculate its risk

Uses/Applications of Fundamental Analysis

1. Fundamental Analysis is used to evaluate a lot of information about the past performance the expected future performance of companies, industries and the economy as a whole before taking the investment decision.
2. Fundamental analysis is really a logical and systematic approach to estimating the future dividends and share price. Fundamental analysis is performed on historical and present data but with the goal of making financial forecasts.
3. Fundamental analysis is a method used for evaluating a security or asset by attempting to measure its intrinsic value by examining related economic, financial and other qualitative and quantitative factors.
4. Fundamental analysts attempt to study everything that can affect the security's value including macroeconomic factors (like the overall economy and industry conditions) and individually specific factors.
5. The fundamental approach is based on an in-depth and all-around study of the underlying forces of the economy, conducted to provide data that can be used to forecast future prices and market developments.
6. Fundamental analysis can be composed of many different aspects: the analysis of the economy as the whole, the analysis of an industry or that of an individual company. A combination of the data is used to establish the true current value of the underlying asset, determine whether they are over or under-valued and to predict the future value of the underlying asset based on this information.
7. It helps an investor obtain information about the overall state of the market, attractiveness and state of a specific security as compared to other securities.

Fundamental Analysis involves 3 steps:



ECONOMIC ANALYSIS

For the security analyst or investor, the anticipated economic environment, and therefore the economic forecast, is important for making decisions concerning both the timings of investment and the relative investment desirability among the various industries in the economy. The key for the analyst is that overall economic activities manifest itself in the behavior of the stocks in general. That is, the success of the economy will ultimately include the success of the overall market. For studying the Economic Analysis, the Macro Economic Factors and the Forecasting Techniques are studied in following paragraphs.

MACRO ECONOMIC FACTORS

The macro economy is the study of all the firms operates in economic environment. The key variables to describe the state of economy are explained as below:

1. Growth rate of Gross Domestic Product (GDP): GDP is a measure of the total production of final goods and services in the economy during a year. It is indicator of economic growth. It consists of personal consumption expenditure, gross private domestic investment, government expenditure on goods and services and net export of goods and services. The firm estimates of GDP growth rate are available with a time lag of one or two years. The expected rate of growth of GDP will be 7.5 percent in year 2005-06. Generally, GDP growth rate ranges from 6-8 percent. The growth rate of economy points out the prospects for the industrial sector and the returns investors can expect from investment in shares. The higher the growth rate of GDP, other things being equal, the more favorable it is for stock market.

2. Savings and investment: Growth of an economy requires proper amount of investments which in turn is dependent upon amount of domestic savings. The amount of savings is favorably

related to investment in a country. The level of investment in the economy and the proportion of

investment in capital market is major area of concern for investment analysts. The level of investment in the economy is equal to: Domestic savings + inflow of foreign capital - investment made abroad. Stock market is an important channel to mobilize savings, from the individuals who have excess of it, to the individual or corporate, who have deficit of it. Savings are distributed over various assets like equity shares, bonds, small savings schemes, bank deposits, mutual fund units, real estates, bullion etc. The demand for corporate securities has an important bearing on stock prices movements. Greater the allocation of equity in investment, favorable impact it have on stock prices.

3. Industry Growth rate: The GDP growth rate represents the average of the growth rate of agricultural sector, industrial sector and the service sector. Publicly listed company play a major role in the industrial sector. The stock market analysts focus on the overall growth of different industries contributing in economic development. The higher the growth rate of the industrial sector, other things being equal, the more favorable it is for the stock market.

4. Price level and Inflation: If the inflation rate increases, then the growth rate would be very little. The increasingly inflation rate significantly affect the demand of consumer product industry. The inflation rate in the Indian economy has been around 7 percent till 1990s. In recent years, the inflation rate has fallen significantly. At present it ranges from 4-5 percent (2005). The industry which have a weak market and come under the purview of price control policy of the government may lose the market, like sugar industry. On the other hand the industry which enjoy a strong market for their product and which do not come under purview of price control may benefit from inflation. If there is a mild level of inflation, it is good to the stock market but high rate of inflation is harmful to the stock market.

5. Agriculture and monsoons: Agriculture is directly and indirectly linked with the industries Hence increase or decrease in agricultural production has a significant impact on the industrial production and corporate performance Companies using agricultural raw materials as inputs or supplying inputs to agriculture are directly affected by change in agriculture production. For example-Sugar, Cotton, Textile and Food processing industries depend upon agriculture for raw material. Fertilizer and insecticides industries are supplying inputs to agriculture. A good monsoon leads to higher demand for inputs and results in bumper crops. This would lead to buoyancy in stock market. If the monsoon is bad, agriculture production suffers and cast a shadow on the share market.

6. Interest Rate: Interest rates vary with maturity, default risk, inflation rate, productivity of capital etc. The interest rate on money market instruments like Treasury Bills are low, long dated government securities carry slightly higher interest rate and interest rate on corporate debenture is higher. With the deregulation are softened, which were quite high in regulated environment. Interest rate affects the cost of financing to the firms. A decrease in interest rate implies lower cost of finance for firms and more profitability and it finally leads to decline in discount rate applied by the equity investors, both of which have a favorable impact on stock prices. At lower

interest rates, more money at cheap cost is available to the persons who do business with borrowed money, this leads to speculation and rise in price of share.

7. Government budget and deficit: Government plays an important role in the growth of any economy. The government prepares a central budget which provides complete information on revenue, expenditure and deficit of the government for a given period.

Government revenue come from various direct and indirect taxes and government made expenditure on various developmental activities. The excess of expenditure over revenue leads to budget deficit. For financing the deficit the government goes for external and internal borrowings. Thus, the deficit budget may lead to high rate of inflation and adversely affects the cost of production and surplus budget may results in deflation. Hence, balanced budget is highly favorable to the stock market.

8. The tax structure: The business community eagerly awaits the government announcements regarding the tax policy in March every year. The type of tax exemption has impact on the profitability of the industries, Concession and incentives given to certain industry encourages investment in that industry and have favorable impact on stock market.

9. Balance of payment, forex reserves and exchange rate: Balance of payment is the record of all the receipts and payment of a country with the rest of the world. This difference in receipt and payment may be surplus or deficit. Balance of payment is a measure of strength of rupee on external account. The surplus balance of payment augments forex reserves of the country and has a favorable impact on the exchange rates; on the other hand if deficit increases, the forex reserve depletes and has an adverse impact on the exchange rates. The industries involved in export and import are considerably affected by changes in foreign exchange rates. The volatility in foreign exchange rates affects the investment of foreign institutional investors in Indian Stock Market. Thus, favorable balance of payment renders favorable impact on stock market.

10. Infrastructural facilities and arrangements: Infrastructure facilities and arrangements play an important role in growth of industry and agriculture sector. A wide network of communication system, regular supply of power, a well developed transportation system (railways, transportation, road network, inland waterways, port facilities, air links and telecommunication system) boost the industrial production and improves the growth of the economy. Banking and financial sector should be sound enough to provide adequate support to industry and agriculture. The government has liberalized its policy regarding the communication, transport and power sector for foreign investment. Thus, good infrastructure facilities affect the stock market favorable.

11. Demographic factors: The demographic data details about the population by age, occupation, literacy and geographic location. These factors are studied to forecast the demand for the consumer goods. The data related to population indicates the availability of work force.

The cheap labour force in India has encouraged many multinationals to start their ventures. Population, by providing labour and demand for products, affects the industry and stock market.

12. Sentiments: The sentiments of consumers and business can have an important bearing on economic performance. Higher consumer confidence leads to higher expenditure and higher business confidence leads to greater business investments. All this ultimately leads to economic growth. Thus, sentiments influence consumption and investment decisions and have a bearing on the aggregate demand for goods and services.

ECONOMIC FORECASTING TECHNIQUES

To estimate the stock price changes, an analyst has to analyze the macro economic environment. All the economic activities affect the corporate profits, investor's attitudes and share price. For the purpose of economic analysis and in order to decide the right time to invest in securities some techniques are used. These are explained as below:

1. Anticipatory Surveys: Under this prominent people in government and industry are asked about their plans with respect to construction, plant and equipment expenditure, inventory adjustments and the consumers about their future spending plans. To the extent that these people plan and budget for expenditure in advance and adhere to their intentions, surveys of intentions constitute a valuable input in forecasting process. It is necessary that surveys of intentions be based on elaborate statistical sampling procedures, the greatest short coming of intentions, surveys is that the forecaster has no guarantee that the intention will be carried out. External shocks, such as strikes, political turmoil or government action can cause changes in intentions.

2. Barometric or Indicator approach: Barometric technique is based on the presumption that relationship can exist among various economic time series. For example, industrial production overtime and industrial loans by commercial banks over time may move in same direction. Historical data are examined in order to ascertain which economic variables have led, lagged after of moved together with the economy. A leading indicator may be leading because it measures something that overshadows a change in production activity.

There are three kind of relationships among economic time series:

- **Leading series:** Leading series consists of the data that move ahead of the series being compared. For example applications for the amount of housing loan over time is that happen a leading series for the demand of construction material, birth rate of children is the leading series for demand of seats in schools etc. In other words, leading indicators are those time series data that historically reach their high points (peaks) or their low points (troughs) in advance of total economic activity.

- **Coincident series:** When data in series moves up and down along with some other series, it is known as coincident series. A series of data on national income is often coincident with the series of employment in an economy (over a short period) . In other words, coincident indicators reach their peaks or trough at approximately the same time as the economy.
- **Lagging series:** Where data moves up and down behind the series being compared, example, data on industrial wages over time is a lagging series when compared with series of price index for industrial workers. They reach their turning points after the economy has already reached its own.
- **Diffusion Indexes:** Some of the indicators appear in more than one class, and then the problem of choice may arise. Furthermore, it is not advisable to rely on just one of the indicators. This leads to the usage of what is referred to as the diffusion index. A diffusion index copes with the problem of differing signals given by the indicators. It is percentage of rising indicators. In this method a group of leading indicators is initially chosen. Then the percentage of the group chosen indicators which have fallen (or, risen) over the last period is plotted against time to get the diffusion index. For example, if there are say 9 leading indicators for forecasting the construction activity of dwelling units and if by plotting we find that say, 6 indices show a rise. then we can calculate that diffusion index is $(6/9 * 100) = 66.7$ percent. When the index exceeds 50 percent, we can predict a rise in forecast variable.

4. Money and Stock Prices: Monetary theory in its simplest form states that fluctuations in the rate of growth of money supply are of utmost importance in determining GNP, corporate profits, interest rates, stock prices etc. Monetarists contend that changes in growth rate of money supply set off a complicated series of events that ultimately affects share prices. In addition, these monetary changes lead stock price changes. Thus, while making forecasts, changes in growth rate of money supply should be given due importance. Some thinkers states that stock market leads changes in money supply. However, sound monetary policy is a necessary ingredient for steady growth and stable prices.

5. Econometric Model Building: The econometric methods combine statistical tools with economic theories to estimate economic variables and to forecast the intended economic variables. The forecast made through econometric method are much more reliable than those made through any other method. For applying econometric technique, the user is to specify in a formal mathematical manner the precise relation between the dependent and independent variable. In using econometrics, the forecaster must quantify precisely the relationships and assumptions be is making. This not only gives him direction but also the magnitudes.

An econometric model may be a single-equation regression model or it may consist of a system of simultaneous equations. Single equation regression serves the purpose of forecasting in many cases. But where the relationship between economic variables are complex and variable are so interrelated that unless one is determined, the other cannot be determined, a single equation regression model does not serve the purpose. In that case, a system of simultaneous equations is used to estimate and forecast the target variable.

6. Opportunistic Model Building: Opportunistic model building or GNP model building or sectoral analysis is widely used forecasting method. Initially, the forecaster must hypothesize total demand and thus total income during the forecast period. Obviously, this will necessitate assuming certain environmental decisions, such as war or peace, political relationships among the level of interest rates. After, this work has been done, the forecaster begins building a forecast of the GNP figure by estimating the levels of the various component of GNP like the number of consumption expenditures, gross private domestic investment, government purchases of goods and services and net exports. After adding the four major categories the forecaster comes up with a GNP forecast. Now he tests this total for consistency with an independently arrived at a priori forecast of GNP.

INDUSTRY ANALYSIS

The mediocre firm in the growth industry usually out performs the best stocks in a stagnant industry. Therefore, it is worthwhile for a security analyst to pinpoint growth industry, which has good investment prospects. The past performance of an industry is not a good predictor of the future- if one look very far into the future. Therefore, it is important to study industry analysis. For an industry analyst- industry life cycle analysis, characteristics and classification of industry is important. All these aspects are enlightened in following sections:

INDUSTRY LIFE CYCLE ANALYSIS

Many industrial economists believe that the development of almost every industry may be analyzed in terms of following stages.

1. Pioneering stage: During this stage, the technology and product is relatively new. The prospective demand for the product is promising in this industry. The demand for the product attracts many producers to produce the particular product. This lead to severe competition and only fittest companies survive in this stage. The producers try to develop brand name, differentiate the product and create a product image. This would lead to non-price competition too. The severe competition often leads to change of position of the firms in terms of market share and profit.

2. Rapid growth stage: This stage starts with the appearance of surviving firms from the pioneering stage. The companies that beat the competition grow strongly in sales, market share and financial performance. The improved technology of production leads to low cost and good quality of products. Companies with rapid growth in this stage, declare dividends during this stage. It is always advisable to invest in these companies.

3. Maturity and stabilization stage: After enjoying above-average growth, the industry now enters in maturity and stabilization stage. The symptoms of technology obsolescence may appear. To keep going, technological innovation in the production process should be introduced. A close monitoring at industries events are necessary at this stage.

4. Decline stage: The industry enters the growth stage with satiation of demand. encroachment of new products, and change in consumer preferences. At this stage the earnings "of the industry are started declining. In this stage the growth of industry is low even in boom period and decline at a higher rate during recession. It is always advisable not to invest in the share of low growth industry.

CLASSIFICATION OF INDUSTRY

Industry means a group of productive or profit making enterprises or organizations that have a similar technically substitute goods, services or source of income. Besides Standard Industry Classification (SIC), industries can be classified on the basis of products and business cycle i.e. classified according to their reactions to the different phases of the business cycle. These are classified as follows:

1. Growth Industries: These industries have special features of high rate of earnings and growth in expansion, independent of the business cycle. The expansion of the industry depends on the technological change or an innovative way of doing or selling something. For example-in present scenario the information technology sector have higher growth rate. There is some growth in electronics, computers, cellular phones, engineering, petro-chemicals. telecommunication, energy etc.

2. Cyclical Industries: The growth and profitability of the industry move along with the business cycle. These are those industries which are most likely to benefit from a period of economic prosperity and most likely to suffer from a period of economic recession. These especially include consumer goods and durables whose purchase can be postponed until persona; financial or general business conditions improve. For example-Fast Moving Consumer Goods (FMCG) commands a the recession. a good market in the boom period and demand for them slackens during the recession.

3. Defensive Industries: Defensive industries are those, such as the food processing industry, which hurt least in the period of economic downswing. For example- the industries selling necessities of consumers withstands recession and depression. The stock of defensive industries can be held by the investor for income earning purpose. Consumer nondurable and services, which in large part are the items necessary for existence, such as food and shelter, are products of defensive industry.

4. Cyclical-growth Industries: These possess characteristics of both a cyclical industry and a growth industry. For example, the automobile industry experiences period of stagnation, decline but they grow tremendously. The change in technology and introduction of new models help the automobile industry to resume their growing path.

CHARACTERISTICS OF AN INDUSTRY ANALYSIS

In an industry analysis, the following key characteristics should be considered by the analyst. These are explained as below:

1. Post sales and Earnings performance: The two important factors which play an important role in the success of the security investment are sales and earnings. The historical performance of sales and earnings should be given due consideration, to know how the industry. have reacted in the past. With the knowledge and understanding of the reasons of the past behavior, the investor can assess the relative magnitude of performance in future. The cost structure of an industry is also an important factor to look into. The higher the cost component, the higher the sales volume necessary to achieve the firm's break-even point, and vice-versa.

2. Nature of Competition: The numbers of the firms in the industry and the market share of the top firms in the industry should be analyzed. One way to determine competitive conditions is to observe whether any barriers to entry exist. The demand of particular product, its profitability and price of concerned company scrip's also determine the nature of competition. The investor before investing in the scrip of a company should analyze the market share of the particular company's product and should compare it with other companies. If too many firms are present in the organized sector, the competition would be severe. This will lead to a decline in price of the product.

3. Raw Material and Inputs: Here, we have to look into the industries, which are dependent upon imports of scarce raw material, competition from other companies and industries, barriers to entry of a new company, protection from foreign competition, import and export restriction etc. An industry which has a limited supply of materials domestically and where imports are restricted will have dim growth prospects. Labour is also an input and industries with labour problems may have difficulties of growth.

4. Attitude of Government towards Industry: It is important for the analyst or prospective investor to consider the probable role government will play in industry. Will it provide financial support or otherwise? Or it will restrain the industry's development through restrictive legislation and legal enforcement? The government policy with regard to granting of clearance, installed capacity and reservation of the products for small industry etc. are also factors to be considered for industry analysis.

5. Management: An industry with many problems may be well managed, if the promoters and the management are efficient. The management likes Tatas, Birlas, Ambanies etc. who have a reputation, built up their companies on strong foundations. The management has to be assessed in terms of their capabilities, popularity, honesty and integrity. In case of new industries no track record is available and thus, investors have to carefully assess the project reports and the assessment of financial institutions in this regard. A good management also ensures that the future expansion plans are put on sound basis.

6. Labour Conditions and Other Industrial Problems: The labour scenario in a particular industry is of great importance. If we are dealing with a labour intensive production process or a very mechanized capital intensive process where labour performs crucial operations, the possibility of strike looms as an important factor to be reckoned with. Certain industries with problems of marketing like high storage costs, high transport costs etc leads to poor growth potential and investors have to careful in investing in such companies.

7. Nature of Product Line: The position of the industry in the life cycle of its growth initial stage, high growth stage and maturing stage are to be noted. It is also necessary to know the industries with a high growth potential like computers, electronics, chemicals, diamonds etc., and whether the industry is in the priority sector of the key industry group or capital goods or consumer goods groups. The importance attached by the government in their policy and of the Planning Commission in their assessment of these industries is to be studied.

8. Capacity Installed and Utilized: The demand for industrial products in the economy is estimated by the Planning Commission and the Government and the units are given licensed capacity on the basis of these estimates. If the demand is rising as expected and market is good for the products, the utilization of capacity will be higher, leading to bright prospects and higher profitability. If the quality of the product is poor, competition is high and there are other constraints to the availability of inputs and there are labour problems, then the capacity utilization will be low and profitability will be poor.

9. Industry Share Price Relative to Industry Earnings: While making investment the current price of securities in the industry, their risk and returns they promise is considered. If the price is very high relative to future earnings growth, the investment in these securities is not wise. Conversely, if future prospects are dim but prices are low relative to fairly level future patterns of earnings, the stocks in this industry might be an attractive investment.

10. Research and Development: For any industry to survive in the national and international markets, product and production process have to be technically competitive. This depends upon the research and development in the particular industry. Proper research and development activities help in obtaining economic of scale and new market for product. While making investment in any industry the percentage of expenditure made on research and development should also be considered.

11. Pollution Standards: These are very high and restricted in the industrial sector. These differ from industry to industry, for example, in leather, chemical and pharmaceutical industries the industrial effluents are more.

PROFIT POTENTIAL OF INDUSTRIES: PORTER MODEL

Michael Porter has argued that the profit potential of an industry depends on the combined strength of the following five components as explained below. Following Figure depicts the forces that drive competition and determine industry profit potential. These are:

1. Threat of New Entrants: New entrants add capacity, inflate costs, push prices down and reduce profitability. Hence, if an industry face threat of new entrants, its profit potential would be limited. The threat from new entrants is low if the entry barriers confer an advantage on existing firms and deter new entrants. Entry barriers are high when:

- The new entrants have to invest substantial resources to enter the industry.
- Economics of scale are enjoyed by the industry.
- The government policy limits or even prevents new entrants.
- Existing firms control the distribution channels, benefit from product differentiation in the form of brand image and customer loyalty, and enjoy some kind of proprietary experience curve.

2. Rivalry among the Existing Firms: Firms in an industry compete on the basis of price, quality, promotion service, warranties etc. If the rivalry between the firms in an industry is strong, competitive moves and countermoves dampen the average profitability of the industry. The intensity of rivalry in an industry tends to be high when:

- The number of competitors in the industry is large.
- At least a few firms are relatively balanced and capable of engaging in a sustained competitive battle.
- The industry growth is sluggish, prodding firms to strive for a higher market share.
- The industry confronts high exit barriers.
- The industry's product is regarded as a commodity or near-commodity, stimulating strong price and service competition.

3. Pressure from Substitute Products: All the firms in an industry face competition from industries producing substitute products. The substitute goods may limit the profit potential of the industry by imposing a ceiling on the prices that can be charged by the firms in the industry. The threat from substitute products is high when:

- The price-performance trade off offered by the substitute products is attractive.
- The switching costs for prospective buyers are minimal.
- The substitute products are being produced by industries earning superior profits.

4. Bargaining Power of Buyers: Buyer is a competitive force. They can bargain for price cut, ask for superior quality and better services and induce rivalry among competitors. If they are powerful, they can depress the profitability of the supplier industry. The bargaining power of a buyer group is high when:

- Its purchases are large relative to the sales of the seller.
- Its switching costs are low.
- It poses a strong threat of backward integration.

5. Bargaining Power of Suppliers: Suppliers, like buyers, can exert a competitive force in an industry as they can raise prices, lower quality and curtail the range of free services they provide. Powerful suppliers can hurt the profitability of the buyer industry. Suppliers have strong bargaining power when:

- Few suppliers dominate and the supplier group is more concentrated than the buyer group.
- There are hardly any viable substitutes for the products supplied.
- The switching costs for the buyers are high.
- Suppliers do present a real threat of forward integration.

TECHNIQUES FOR EVALUATING RELEVANT INDUSTRY FACTORS

The techniques (long term and short term) for evaluating industry factors are explained in the following sections. These are:

1. End-Use and Regression Analysis: End-use analysis for product demand analysis refers to a process whereby the analyst attempts to diagnose the factors that determine the demand for output of the industry. In a single product firm, units demanded multiplied by price will equal sales revenue. The analyst frequently forecast the factors like disposable income, per capita consumption, price elasticity of demand etc. that influence the demand of the product. For studying the relationship between various variables simple linear regression analysis and correlation analysis is used. Industry sales against time, industry sales against macro economic variables like gross national product, personal income disposable income and industry earnings

over time may be regressed. When two or more independent variables are better able to explain in the dependent variables, the multiple analysis is used.

2.Input-Output Analysis: It is a way of getting inside demand analysis or end use analysis. It reflects the flow of goods and services through the economy including intermediate steps in the production process as goods proceed from raw material stage to final consumption stage. Thus input-output analysis observes patterns of consumption at all stages in order to direct any changing patterns or trends that might indicate the growth or decline on industries. This technique is more appropriate for an intermediate or long term forecast than for short term forecast.

3.Growth Rate: The growth rate of different industry should be forecasted by considering historical data. Once the growth rate is estimated, future values of earnings or sales may be forecast. Since the growth rate is such an important factor in determining the stock prices, not only its size but its duration must be estimated. Sometimes, patents expire, competition within an industry becomes more aggressive because foreign firms begin to compete, economically depressed periods occur or other factors cause growth rate to drop.

COMPANY ANALYSIS

Fundamental analysis is the method of analyzing companies based on factors that affect their intrinsic value. There are two sides to this method: the quantitative and the qualitative. The quantitative side involves looking at factors that can be measured numerically, such as the company's assets, liabilities, cash flow, revenue and price-to-earnings ratio. The limitation of quantitative analysis, however, is that it does not capture the company's aspects or risks unmeasurable by a number - things like the value of an executive or the risks a company faces with legal issues. The analysis of these things is the other side of fundamental analysis: the qualitative side or non-number side. Although relatively more difficult to analyze, the qualitative factors are an important part of a company. Since they are not measured by a number, they more represent an either negative or positive force affecting the company. But some of these qualitative factors will have more of an effect, and determining the extent of these effects is what is so challenging. To start, identify a set of qualitative factors and then decide which of these factors add value to the company, and which of these factors decrease value. Then determine their relative importance. The qualities one analyzes can be categorized as having a positive effect, negative effect or minimal effect. The best way to incorporate qualitative analysis into evaluation of a company is to do it once you have done the quantitative analysis. The conclusion come to on the qualitative side can put quantitative analysis into better perspective. If when looking at the company numbers one saw good reason to buy/invest in the company. but then found many negative qualities, he may want to think twice about buying/investing. Negative qualities might include potential litigations, poor R and D prospects or a board full of insiders.

The conclusions of qualitative analysis either reconfirm or raise questions about the conclusions of quantitative analysis. Fundamental analysis is not as simple as looking at numbers and computing ratios; it is also important to look at influences and qualities that do not have a number value. The present and future values are affected by the following factors.

Factors Affecting Present and Future value of Stocks

1. Competitive Edge: Many industries in India are composed of hundreds of individual companies. The large companies are successful in meeting the competition and some companies rise to the position of eminence and dominance. The companies who have obtained the leadership have proven their ability to withstand competition and to have a sizable share in the market. The competitiveness of the company can be studied with the help of:

a. Market share: The market share of the company helps to determine a company's relative position within the industry. If the market share is high, the company would be able to meet the competition successfully. The size of the company should also be considered while analyzing the market share, because the smaller companies may find it difficult to survive in the future.

b. Growth of annual sales: Investors generally prefer to study the growth in sales because the larger size companies may be able to withstand the business cycle rather than the company of smaller size. The rapid growth keeps the investor in a better position as growth in sales is followed by growth in profit. The growth in sales of the company is analyzed both in rupee terms and in physical terms.

c) Stability of annual sales: If a firm has stable sales revenue, other things being remaining constant, will have more stable earnings. Wide variation in sales leads to variation in capacity utilization, financial planning and dividends. This affects the company's position and investor's decision to invest.

2) Earnings: The earnings of the company should also be analyzed along with the sales level. The income of the company is generated through the operating (in service industry like banks-interest on loans and investment) and non-operating income (rent company, rentals from lease, dividends from securities). The investor should analyze the sources of income properly.

The investor should be well aware with the fact that the earnings of the company may vary due to following reasons:

- Change in sales.
- Change in costs.
- Depreciation method adopted.
- Inventory accounting method.
- Wages, salaries and fringe benefits.
- Income tax and other taxes.

3) Capital Structure: Capital structure is combination of owned capital and debt capital which enables to maximize the value of the firm. Under this, we determine the proportion in which the capital should be raised from the different securities. The capital structure decisions are related with the mutual proportion of the long term sources of capital. The owned capital includes share capital

a) Preference shares: Preference shares are those shares which have preferential rights regarding the payment of dividend and repayment of capital over the equity shareholders. At present many companies resort to preference shares. The preference shares induct some degree of leverage in finance. The leverage effect of the preference shares is comparatively lesser than that the debt because the preference shares dividend are not tax deductible. If the portion of preference share in the capital is large, it tends to create instability in the earnings of equity shares when the earnings of the company fluctuate.

b) Debt: It is an important source of finance as it has the specific benefit of low cost of capital because interest is tax deductible. The leverage effect of debt is highly advantageous to the equity shareholders. The limits of debt depend upon the firm's earning capacity and its fixed assets.

4) Management: The basic objective of the company is to attain the stated objectives of the company for the good of the equity holders, the public and employees. If the objectives of the company are achieved, investor will have a profit. Good management results in high profit to investors. Management is responsible for planning, organizing, actuating and controlling the activities of the company. The good management depends upon the qualities of the manager.

5) Operating Efficiency: The operating efficiency of the company directly affects the earnings capacity of a company. An expanding company that maintains high operating efficiency with a low break even point earns more than the company with high break even point. If a firm has stable operating ratio, the revenues also would be stable. Efficient use of fixed assets with raw materials, labour and management would lead to more income from sales. This leads to internal fund generation for the expansion of the firm.

6) Financial Performance:

a) Balance Sheet: The level, trends, and stability of earnings are powerful forces in the determination of security prices. Balance sheet shows the assets, liabilities and owner's equity in a company. It is the analyst's primary source of information on the financial strength of a company. Accounting principles dictate the basis for assigning values to assets. Liability values are set by contracts. When assets are reduced by liabilities, the book value of share holder's equity can be ascertained. The book value differs from current value in the market place, since market value is dependent upon the earnings power of assets and not their cost of values in the accounts.

b) Profit and Loss account: It is also called as income statement. It expresses the results of financial operations during an accounting year i.e. with the help of this statement we can find out how much profit or loss has taken place from the operation of the business during a period of time. It also helps to ascertain how the changes in the owner's interest in a given period has taken place due to business operations. Last of all, for analyzing the financial position of any company following factors need to be considered for evaluating present situation and prospects of company.

COMPANY ANALYSIS: THE STUDY OF FINANCIAL STATEMENTS

Financial statement means a statement or document which explains necessary financial information. Financial statements express the financial position of a business at the end of accounting period (Balance Sheet) and result of its operations performed during the year (Profit and Loss Account). In order to determine whether the financial or operational performance of company is satisfactory or not, the financial data are analyzed. Different methods are used for this purpose. The main techniques of financial analysis are:

1. Comparative Financial Statements
2. Trend Analysis
3. Common Size Statement
4. Fund Flow Statement
5. Cash Flow Statement
6. Ratio Analysis

1. Comparative Financial Statements: In comparative financial statement, the financial statements of two periods are kept by side so that they can be compared. By preparing comparative statement the nature and quantum of change in different items can be calculated and it also helps in future estimates. By comparing with the data of the previous years it can be ascertained what type of changes in the different items of current year have taken place and future trends of business can be estimated.

2. Trend Analysis: In order to compare the financial statements of various years trend percentages are significant. Trend analysis helps in future forecast of various items on the basis of the data of previous years. Under this method one year is taken as base year and on its basis the ratios in percentage for other years are calculated. From the study of these ratios the changes in that item are examined and trend is estimated. Sometimes sales may be increasing continuously and the inventories may also be rising. This would indicate the loss of market share of a particular company's product. Likewise sales may have an increasing trend but profit may

remain the same. Here the investor has to look into the cost and management efficiency of the company.

3. Common Size Statement: Common size financial statements are such statements in which items of the financial statements are converted in percentage on the basis of common base. In common size Income Statement, net sales may be considered as 100 percent. Other items are converted as its proportion. Similarly, for the Balance sheet items total assets or total liabilities may be taken as 100 percent and proportion of other items to this total can be calculated in percentage.

4. Fund Flow Statement: Income Statement or Profit or Loss Account helps in ascertainment of profit or loss for a fixed period. Balance Sheet shows the financial position of business on a particular date at the close of year. Income statement does not fully explain funds from operations of business because various non-fund items are shown in Profit or Loss Account. Balance Sheet shows only static financial position of business and financial changes occurred during a year can't be known from the financial statement of a particular date. Thus, Fund Flow Statement is prepared to find out financial changes between two dates. It is a technique of analyzing financial statements. With the help of this statement, the amount of change in the funds of a business between two dates and reasons thereof can be ascertained. The investor could see clearly the amount of funds generated or lost in operations. These reveal the real picture of the financial position of the company.

5. Cash Flow Statement: The investor is interested in knowing the cash inflow and outflow of the enterprise. The cash flow statement expresses the reasons of change in cash balances of company between two dates. It provides a summary of stocks of cash and uses of cash in the organization. It shows the cash inflows and outflows. Inflows (sources) of cash result from cash profit earned by the organization, issue of shares and debentures for cash, borrowings, sale of assets or investments, etc. The outflows (uses) of cash results from purchase of assets, investment redemption of debentures or preferences shares, repayment of loans, payment of tax, dividend, interest etc. With the help of cash flow statement the investor can review the cash movement over an operating cycle. The factors responsible for the reduction of cash balances in spite of increase in profits or vice versa can be found out.

6. Ratio Analysis: Ratio is a relationship between two figures expressed mathematically. It is quantitative relationship between two items for the purpose of comparison. Ratio analysis is a technique of analyzing financial statements. It helps in estimating financial soundness or weakness. Ratios present the relationships between items presented in profit and loss account and balance sheet. It summaries the data for easy understanding, comparison and interpretation. The ratios are divided in the following group:

a) Liquidity Ratios

b) Turnover Ratios

c) Profit Margin Ratios

Technical Analysis

Fundamental analysis and Technical analysis are the two main approaches to security analysis. Technical analysis is frequently used as a supplement to fundamental analysis rather than as a substitute to it. According to technical analysis, the price of stock depends on demand and supply in the market place. It has little correlation with the intrinsic value. All financial data and market information of a given stock is already reflected in its market price. Technical analysts have developed tools and techniques to study past patterns and predict future price. Technical analysis is basically the study of the markets only. Technical analysts study the technical characteristics which may be expected at market turning points and their objective assessment. The previous turning points are studied with a view to develop some characteristics that would help in identification of major market tops and bottoms. Human reactions are, by and large consistent in similar though not identical reaction; with his various tools, the technician attempts to correctly catch changes in trend and take advantage of them.

Technical analysis is directed towards predicting the price of a security. The price at which a buyer and seller settle a deal is considered to be the one precise figure which synthesis, weighs and finally expresses all factors, rational and irrational, quantifiable and non-quantifiable and is the only figure that counts.

Thus, the technical analysis provides a simplified and comprehensive picture of what is happening to the price of a security. Like a shadow or reflection it shows the broad outline of the whole situation and it actually works in practice.

ASSUMPTIONS OF TECHNICAL ANALYSIS

- The market value of a security is solely determined by the interaction of demand and supply factors operating in the market.
- The demand and supply factors of a security are surrounded by numerous factors: these factors are both rational as well as irrational.
- The security prices move in trends or waves which can be both upward or downward depending upon the sentiments, psychology and emotions of operators or traders.
- The present trends are influenced by the past trends and the projection of future trends is possible by an analysis of past price trends.
- Except minor variations, stock prices tend to move in trends which continue to persist for an appreciable length of time.

- Changes in trends in stock prices are caused whenever there is a shift in the demand and supply factors.
- Shifts in demand and supply, no matter when and why they occur, can be detected through charts prepared specially to show market action.
- Some chart trends tend to repeat themselves. Patterns which are projected by charts record price movements and these patterns are used by technical analysis for making forecasts about the future patterns.

TOOLS AND TECHNIQUES OF TECHNICAL ANALYSIS

There are numerous tools and techniques for doing technical analysis. Basically this analysis is done from the following four important points of view:

- 1) Prices:** Whenever there is change in prices of securities, it is reflected in the changes in investor attitude and demand and supply of securities.
- 2) Time:** The degree of movement in price is a function of time. The longer it takes for a reversal in trend, greater will be the price change that follows.
- 3) Volume:** The intensity of price changes is reflected in the volume of transactions that accompany the change. If an increase in price is accompanied by a small change in transactions, it implies that the change is not strong enough.
- 4) Width:** The quality of price change is measured by determining whether a change in trend spreads across most sectors and industries or is concentrated in few securities only. Study of the width of the market indicates the extent to which price changes have taken place in the market in accordance with a certain overall trends.

Dow Theory

Originally proposed in the late nineteenth century by Charles H Dow, the editor of Wall Street Journal, the Dow theory is perhaps the oldest and best-known theory of technical analysis. Dow developed this theory on the basis of certain hypothesis, which are as follows:

- a. No single individual or buyer or buyer can influence the major trends in the market. However, an individual investor can affect the daily price movement by buying or selling huge quantum of particular scrip.
- b. The market discounts everything. Even natural calamities such as earth quake, plague and fire also get quickly discounted in the market. The world trade center blast affected the share market for a short while and then the market returned back to normalcy.
- c. The theory is not infallible and it is not a tool to beat the market but provides a way to understand the market.

Explanation of the Theory

Dow described stock prices as moving in trends analogous to the movement of postulated three types of price movements over time:

- (1) major trends that are like tide in the ocean,
- (2) intermediate trends that resemble waves, and
- (3) short run movements that are like ripples.

Primary Trend

The price trend may be either increasing or decreasing. When the market exhibits the increasing trend, it is called bull market. The bull market shows three clear-cut peaks. Each peak is higher than the previous peak and this price rise is accompanied by heavy trading volume. Here, each profit taking reversal that is followed by an increased new peak has a trough above the prior trough, with relatively light trading volume during the reversals, indicating that there is limited interest in profit taking at these levels. And the phases leading to the three peaks are revival, improvement in corporate profit and speculation. The revival period encourages more and more investors to buy scrips, their expectations about the future being high. In the second phase, increased profits of corporate would result in further price rise. In the third phase, prices advance due to inflation and speculation.

Secondary Trend

Secondary trend moves against the main trends and leads to the correction. In the bull market, the secondary trend would result in the fall of about 33-66 percent of the earlier rise. In the bear market, the secondary trend carries the price upward and corrects the main trend. Compared to the time taken for the primary trend, secondary trend is swift and quicker.

The difference can be further represented in the form of a chart

Basis	Fundamental Analysis	Technical Analysis
Definition	Calculates stock value using economic factors, known as fundamentals.	Uses price movement of security to predict future price movements
Data generated from	Financial statements	Charts
Stock bought	When price falls below intrinsic value	When trader believes they can sell it on for a higher price
Time Horizon	Long-term approach	Short-term approach
Function	Investing	Trade
Concepts used	Return on Equity (ROE) and Return on Assets (ROA)	Dow Theory, Price Data

Vision	Looks backward as well as	Looks backward
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	forward	
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The Efficient Markets Hypothesis (EMH)

Introduction

The Efficient Markets Hypothesis (EMH) is an investment theory primarily derived from concepts attributed to Eugene Fama's research as detailed in his 1970 book, "Efficient Capital Markets: A Review of Theory and Empirical Work." Fama put forth the basic idea that it is virtually impossible to consistently "beat the market"-to make investment returns that outperform the overall market average as reflected by major stock indexes such as the S&P 500 Index or Nifty.

According to Fama's theory, while an investor might get lucky and buy a stock that brings him huge short-term profits, over the long term he cannot realistically hope to achieve a return on investment that is substantially higher than the market average.

Fama's investment theory-which carries essentially the same implication for investors as the Random Walk Theory-is based on a number of assumptions about securities markets and how they function. The assumptions include the one idea critical to the validity of the efficient markets hypothesis: the belief that all information relevant to stock prices is freely and widely available. "universally shared" among all investors.

As there are always a large number of both buyers and sellers in the market, price movements always occur efficiently (i.e., in a timely, up-to-date manner). Thus, stocks are always trading at their current fair market value."

The major conclusion of the theory is that since stocks always trade at their fair market value, then it is virtually impossible to either buy undervalued stocks at a bargain or sell overvalued stocks for extra profits. Neither expert stock analysis nor carefully implemented market timing strategies can hope to average doing any better than the performance of the overall market. If that's true, then the way investors can generate superior returns is by taking on much greater risk.

Variations of Efficient Markets Hypothesis

There are three variations of the hypothesis-the weak, semi-strong, and strong forms - which represent three different assumed levels of market efficiency.

1. Weak Form

The weak form of the EMH assumes that the prices of securities reflect all available public market information but may not reflect new information that is not yet publicly available. It additionally assumes that past information regarding price, volume, and returns is independent of future prices.

The weak form EMH implies that technical trading strategies cannot provide consistent excess returns because past price performance can't predict future price action that will be based on new information. The weak form, while it discounts technical analysis, leaves open the possibility that superior fundamental analysis may provide a means of outperforming the overall market average return on investment.

2. Semi-strong Form

The semi-strong form of the theory dismisses the usefulness of both technical and fundamental analysis. The semi-strong form of the EMH incorporates the weak form assumptions and expands on this by assuming that prices adjust quickly to any new public information that becomes available, therefore rendering fundamental analysis incapable of having any predictive power about future price movements.

3. Strong Form

The strong form of the EMH holds that prices always reflect the entirety of both public and private information. This includes all publicly available information, both historical and new, or current, as well as insider information. Even information not publicly available to investors, such as private information known only to a company's CEO, is assumed to be always already factored into the company's current stock price.

Portfolios Construction Theories

Portfolio is a combination of securities such as stocks, bonds and money market instruments. The process of blending together the broad asset classes so as to obtain optimum return with minimum risk is called portfolio construction. Individual securities have risk return characteristics of their own. Portfolios may or may not take on the aggregate characteristics of their individual parts. Diversification of investment helps to spread risk over many assets. A diversification of securities gives the assurance of obtaining the anticipated return on the portfolio. In a diversified portfolio, some securities may not perform as expected, but others may exceed the expectation and making the actual return of the portfolio reasonably close to the anticipated one. Keeping a portfolio of single security may lead to a greater likelihood of the actual return somewhat different from that of the expected return. Hence, it is a common practice to diversify securities in the portfolio.

Benefits of Portfolios

Expected return from individual securities carrying some degree of risk. Risk was defined as the standard deviation around the expected return. In effect we equated a security's risk with the variability of its return. More dispersion or variability about a security's expected return meant the security was riskier than one with less dispersion. The simple fact that securities carrying differing degrees of expected risk lead most investors to the notion of holding more than one security at a time, is an attempt to spread risks by not putting all their eggs into one basket. Diversification of one's holdings is intended to reduce risk in an economy in which every asset's returns are subject to some degree of uncertainty. Even the value of cash suffers the inroads of inflation. Most investors hope that if they hold several assets, even if one goes bad, the others will provide some protection from an extreme loss.

Approaches in Portfolio Construction

Commonly, there are two approaches in the construction of the portfolio of securities viz. traditional approach and Markowitz efficient frontier approach (modern approach). In the traditional approach, investor's needs in terms of income and capital appreciation are evaluated and appropriate securities are selected to meet the needs of the investor. The common practice in the traditional approach is to evaluate the entire financial plan of the individual. In the modern approach, portfolios are constructed to maximize the expected return for a given level of risk. It views portfolio construction in terms of the expected return and the risk associated with obtaining the expected return.

➤ **Traditional Approach**

The traditional approach basically deals with two major decisions. They are:

- (a) Determining the objectives of the portfolio.
- (b) Selection of securities to be included in the portfolio.

Normally, this is carried out in four to six steps. Before formulating the objectives, the constraints of the investor should be analyzed. Within the given framework of constraints, objectives are formulated. Then based on the objectives, securities are selected. After that, the risk and return of the securities should be studied. The investor has to assess the major risk categories that he or she is trying to minimize. Compromise on risk and non-risk factors has to be carried out. Finally relative portfolio weights are assigned to securities like bonds, stocks and debentures and then diversification is carried out.

Below are the steps under traditional approach:

1. Analysis of Constraints

The constraints normally discussed are: income needs, liquidity, time horizon, safety, tax considerations and the temperament.

2. Determination of Objectives

Portfolios have the common objective of financing present and future expenditures from a large pool of assets. The return that the investor requires and the degree of risk he is willing to take depend upon the constraints. The objectives of portfolio range from income to capital appreciation. The common objectives are stated below:

- Current income
- Growth in income
- Capital appreciation
- Preservation of capital

The investor in general would like to achieve all the four objectives, nobody would like to lose his investment. But, it is not possible to achieve all the four objectives simultaneously. If the investor aims at capital appreciation, he should include risky securities where there is an equal likelihood of losing the capital. Thus, there is a conflict among the objectives.

3. Selection of Portfolio

The selection of portfolio depends on the various objectives of the investor. If the main objective is getting adequate amount of current income, sixty per cent of the investment is made on debts and 40 per cent on equities. The proportions of investments on debt and equity differ according to the individual's preferences. Money is invested in short term debt and fixed income securities. Here the growth of income becomes the secondary objective and stability of principal amount may become the third. Even within the debt portfolio, the funds invested in short term bonds depends on the need for stability of principal amount in comparison with the stability of income. If the appreciation of capital is given third priority, instead of short term debt the investor opts for long term debt. The period may not be a constraint.

Growth of income and asset mix- Here the investor requires a certain percentage of growth in the income received from his investment. The investor's portfolio may consist of 60 to 100 per cent equities and 0 to 40 per cent debt instrument. The debt portion of the portfolio may consist of concession regarding tax exemption. Appreciation of principal amount is given third priority. For example computer software, hardware and non-conventional energy producing company shares provide good possibility of growth in dividend. Usually, the risk averse investors are very

particular about the stability of principal. According to the life cycle theory, people in the third stage of life also give more importance to the safety of the principal. All the investors have this objective in their mind. No one likes to lose his money invested in different assets. But, the degree may differ. The investor's portfolio may consist more of debt instruments and within the debt portfolio more would be on short term debts.

4. Risk and Return Analysis

The traditional approach to portfolio building has some basic assumptions. First, the individual prefers larger to smaller returns from securities. To achieve this goal, the investor has to take more risk. The ability to achieve higher returns is dependent upon his ability to judge risk and his ability to take specific risks. The risks are namely interest rate risk, purchasing power risk financial risk and market risk. The investor analyses the varying degrees of risk and constructs his portfolio. At first, he establishes the minimum income that he must have to avoid hardships under most adverse economic condition and then he decides risk of loss of income that can be tolerated. The investor makes a series of compromises on risk and non-risk factors like taxation and marketability after he has assessed the major risk categories, which he is trying to minimize.

5. Diversification

Once the asset mix is determined and the risk and return are analysed, the final step is the diversification of portfolio. Financial risk can be minimised by commitments to top-quality bonds, but these securities offer poor resistance to inflation. Stocks provide better inflation protection than bonds but are more vulnerable to financial risks. Good quality convertibles may balance the financial risk and purchasing power risk. According to the investor's need for income and risk tolerance level portfolio is diversified. In the bond portfolio, the investor has to strike a balance between the short term and long term bonds. Short term fixed income securities offer more risk to income and long term fixed income securities offer more risk to principal.

➤ Modern Approach

We have seen that the traditional approach is a comprehensive financial plan for the individual. It takes into account the individual needs such as housing, life insurance and pension plans. But these types of financial planning approaches are not done in the Markowitz approach. According to the theory, it's possible to construct an "efficient frontier" of optimal portfolios offering the maximum possible expected return for a given level of risk. This theory was pioneered by Harry Markowitz in his paper "Portfolio Selection," published in 1952 by the Journal of Finance. Markowitz gives more attention to the process of selecting the portfolio. His planning can be applied more in the selection of common stocks portfolio than the bond portfolio. The stocks are not selected on the basis of need for income or appreciation. But the selection is based on the risk and return analysis. Return includes the market return and dividend. The investor needs return and it may be either in the form of market return or dividend. They are assumed to be indifferent

towards the form of return.

Markowitz Model (HM Model)

Harry Markowitz put forward this model in 1952. It assists in the selection of the most efficient by analyzing various possible portfolios of the given securities. By choosing securities that do not 'move' exactly together, the HM model shows investors how to reduce their risk. The HM model is also called Mean-Variance Model due to the fact that it is based on expected returns (mean) and the standard deviation (variance) of the various portfolios. Harry Markowitz made the following assumptions while developing the HM model

1. Risk of a portfolio is based on the variability of returns from the said portfolio.
2. An investor is risk averse. avoid Risk
3. An investor prefers to increase consumption.
4. The investor's utility function is concave and increasing, due to his risk aversion and consumption preference.
5. Analysis is based on single period model of investment.
6. An investor either maximizes his portfolio return for a given level of risk or maximizes his return for the minimum risk.
7. An investor is rational in nature.

To choose the best portfolio from a number of possible portfolios, each with different return and risk, two separate decisions are to be made:

1. Determination of a set of efficient portfolios.
2. Selection of the best portfolio out of the efficient set.

Determining the Efficient Set

A portfolio that gives maximum return for a given risk, or minimum risk for given return is an efficient portfolio. Thus, portfolios are selected as follows:

- a) From the portfolios that have the same return, the investor will prefer the portfolio a) with lower risk, and
- b) From the portfolios that have the same risk level, an investor will prefer the portfolio with higher rate of return.

Demerits of the Markowitz Model

1. Unless positivity constraints are assigned, the Markowitz solution can easily find highly leveraged portfolios (large long positions in a subset of investable assets financed by large short positions in another subset of assets), but given their leveraged nature the returns from such a portfolio are extremely sensitive to small changes in the returns of the constituent assets and can therefore be extremely 'dangerous'. Positivity constraints are easy to enforce and fix this problem, but if the user wants to "believe" in the robustness of the Markowitz approach, it would be nice if better-behaved solutions (at the very least, positive weights) were obtained in an unconstrained manner when the set of investment assets is close to the available investment opportunities (the market portfolio) but this is often not the case.
2. Practically more vexing, small changes in inputs can give rise to large changes in the portfolio. Mean-variance optimization has been dubbed an 'error maximization' device 'an algorithm that takes point estimates (of returns and co-variances) as inputs and treats them as if they were known with certainty will react to tiny return differences that are well within measurement error'. In the real world, this degree of instability will lead, to begin with, to large transaction costs, but it is also likely to shake the confidence of the portfolio manager in the model.
3. The amount of information (the covariance matrix, specifically, or a complete joint probability distribution among assets in the market portfolio) needed to compute mean-variance optimal portfolio is often intractable and certainly has no room for subjective measurements ('views about the returns of portfolios of subsets of investable assets).

Sharpe's Single Index Model

This simplified model proposes that the relationship between each pair of securities can indirectly be measured by comparing each security to a common factor 'market performance index' that is shared amongst all the securities. As a result, the model can reduce the burden of large input requirements and difficult calculations in Markowitz's mean variance settings (Sharpe, 1963). This model requires only $(3n+2)$ data inputs i.e. estimates of alpha and beta for each security, estimate of unsystematic risk for each security, estimates for expected return on market index and estimates of variance of return on). Due to this simplicity. Sharpe's single index model has gained its popularity to a great extent in the arena of investment finance as compared to Markowitz's model.

Assumptions Made

The Sharpe's Single Index Model is based on the following assumptions:

1. All investors have homogeneous expectations.
2. A uniform holding period is used in estimating risk and return for each security.

3. The price movements of a security in relation to another do not depend primarily upon the nature of those two securities alone. They could reflect a greater influence that might have cropped up as a result of general business and economic conditions.
4. The relation between securities occurs only through their individual influences along with some indices of business and economic activities.
5. The indices, to which the returns of each security are correlated, are likely to be some securities' market proxy.

In Markowitz model a number of co-variances have to be estimated. If a financial institution buys 150 stocks, it has to estimate 11,175 i.e.. $(N^2-N)/2$ correlation co-efficient. Sharpe assumed that the return of a security is linearly related to a single index like the market index.

Cut-off Point

Point which an Investor decided whether to buy Security or not.

Beta

Beta measures the responsiveness of a stock's price to changes in the overall stock market. On comparison of the benchmark index for e.g. NSE Nifty to a particular stock returns, a pattern develops that shows the stock's openness to the market risk. This helps the investor to decide whether he wants to go for the riskier stock that is highly correlated with the market (beta above 1), or with a less volatile one (beta below 1). A stock beta (b) is used to describe the relationship between the individual stock versus the market. Stock Beta is used to measure the risk of a security versus the market by investors. **Beta of market is always assumed at 1.**

Beta is the key factor used in the Capital Asset Price Model (CAPM) which is a model that measures the return of a stock. The volatility of the stock and systematic risk can be judged by calculating beta. A positive beta value indicates that stocks generally move in the same direction with that of the market and the vice versa.

The Capital Asset Pricing Model (CAPM)

The capital asset pricing model (CAPM) was introduced by Jack Treynor (1961) while parallel work was also performed by William Sharp (1964) and Lintner (1965) In 1990, Sharp received the Nobel Memorial Prize in Economics with Harry Markowitz and Merton Miller in the field of financial economics.

The Capital Asset Pricing Model is an economic model which is used for valuing the securities, stocks and assets by relating risk and expected rate of return. In the capital market line, the expected rate of return of an efficient portfolio relates to its standard deviation but cannot show how the expected rate of return of an individual asset relates to its individual risk. This relation is expressed by the capital asset pricing model (CAPM).

The CAPM help us to calculate investment risk and what is the return on the investment.

This investment contains two types of risk.

- Systematic Risk
- Unsystematic Risk

Systematic risks are market risks that cannot be diversified away. For example, wars and interest rates are good examples of the systematic risk.

Unsystematic Risk: Unsystematic risk is specific to each individual stocks and it can be diversified away as the investor increases the number of stocks in portfolio. It is also known as "specific risk".

Assumptions of Capital Asset Pricing Model (CAPM)

The capital asset pricing model (CAPM) is valid within a special set of assumption. These assumptions are:

- All investors have homogenous expectations about the assets.
- Investor may borrow and lend unlimited amount of risk free asset.
- The risk free borrowing and lending rates are equal.
- The quantity of assets is fixed.
- Perfectly efficient capital markets.
- No market imperfections such like taxes and regulation and no change in the of interest rate exists.
- There are no arbitrage opportunities
- There is a separation of production and financial stocks.
- Returns (assets) are distributed by normal distribution.

There are 2 types of CAPM:

➤ **Security Market Line (SML)**

If the investor wants to decide on an investment with an expected return he would know the level of risk he has to take or alternatively given the level of risk, he has preferred to take, he would know the expected return from the chart. The investor has to assess whether it is worth taking a level of risk, if he has a target return which involves that risk, as he is assumed to be generally risk averse. Thus, CAPM and SML help the investor in evaluating risk for a return, in making any investment decision. The principle of the higher the risk, the higher is the return is embodied in this Model.

When used in portfolio management, the SML represents the investment's opportunity cost (investing in a combination of the market portfolio and the risk-free asset). All the correctly priced securities are plotted on the SML.

It is a useful tool in determining if an asset being considered for a portfolio offers a reasonable expected return for risk on the security market line.

➤ **CAPITAL MARKET LINE (CML)**

A line used in the capital asset pricing model to illustrate the rates of return for efficient portfolios depending on the risk-free rate of return and the level of risk (standard deviation) for a particular portfolio.

Difference between CML and SML

1. The CML is a line that is used to show the rates of return, which depends on risk-free rates of return and levels of risk for a specific portfolio. SML, which is also called a Characteristic Line, is a graphical representation of the market's risk and return at a given time.
2. While standard deviation is the measure of risk in CML, Beta coefficient determines the risk factors of the SML
3. While the Capital Market Line graphs define efficient portfolios, the Security Market Line graphs define both efficient and non-efficient portfolios.
4. The Capital Market Line is considered to be superior when measuring the risk factors.
5. Where the market portfolio and risk free assets are determined by the CML., all security factors are determined by the SML.

Arbitrage Pricing Theory (APT)

In finance, arbitrage pricing theory (APT) is a general theory of asset pricing that holds that the expected return of a financial asset can be modeled as a linear function of various macro-economic factors or theoretical market indices, where sensitivity to changes in each factor is represented by a factor-specific beta coefficient. The model-derived rate of return will then be used to price the asset correctly - the asset price should equal the expected end of period price discounted at the rate implied by the model. If the price diverges, arbitrage should bring it back into line. The theory was proposed by the economist Stephen Ross in 1976.

The arbitrage pricing theory (APT) describes the price where a mispriced asset is expected to be. It is often viewed as an alternative to the capital asset pricing model (CAPM), since the APT has more flexible assumption requirements. Whereas the CAPM formula requires the market's expected return, APT uses the risky asset's expected return and the risk premium of a number of macro-economic factors. Arbitrageurs use the APT model to profit by taking advantage of mispriced securities. A mispriced security will have a price that differs from the theoretical price predicted by the model. By going short an over priced security, while concurrently going long the portfolio the APT calculations were based on, the arbitrageur is in a position to make a theoretically risk-free profit.

The general idea behind APT is that two things can explain the expected return on a financial asset:

- (1) macroeconomic/security-specific influences and
- (2) the asset's sensitivity to those influences.

There are an infinite number of security-specific influences for any given security including inflation, production measures, investor confidence, exchange rates, market indices or changes in interest rates. It is up to the analyst to decide which influences are relevant to the asset being analyzed.

Once the analyst derives the asset's expected rate of return from the APT model, he or she can determine what the "correct" price of the asset should be by plugging the rate into a cash flow model.

Note that APT can be applied to portfolios as well as individual securities. After all, a portfolio can have exposures and sensitivities to certain kinds of risk factors as well.

The APT was a revolutionary model because it allows the user to adapt the model to the security being analyzed. And as with other pricing models, it helps the user decide whether a security is undervalued or overvalued and so he or she can profit from this information. APT is also very useful for building portfolios because it allows managers to test whether their portfolios are exposed to certain factors. APT may be more customizable than CAPM, but it is also more

difficult to apply because determining which factors influence a stock or portfolio takes a considerable amount of research. It can be virtually impossible to detect every influential factor much less determine how sensitive the security is to a particular factor. But getting "close enough" is often good enough; in fact studies find that four or five factors will usually explain most of a security's return: surprises in inflation, GNP, investor confidence and shifts in the yield curve.

