INVESTMENT MANAGEMENT

(BBA6 B16)

VI SEMESTER

B.B.A.

Finance Specialisation - Elective 4

(2019 Admission onwards)

CBCSS

UNIVERSITY OF CALICUT
School of Distance Education,
Calicut University P.O.,
Malappuram - 673 635, Kerala.

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UNIVERSITY OF CALICUT

School of Distance Education

Study Material

VI Semester

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INVESTMENT MANAGEMENT

Finance Specialisation (BBA6 B16)

Prepared by:

Dr. Sudheesh S,
Assistant Professor on Contract,
School of Distance Education,
University of Calicut.

Srutinized by:

Dr. Lakshmanan M P,
Associate Professor & Head,
P.G. Department of Commerce,
Government College, Chittur.

CONTENTS

MODULE	PARTICULARS	PAGE NO.
I	*INVESTMENTS*	5
II	*INVESTMENT ANALYSIS*	56
III	*APPROACHES TO INVESTMENT VALUATION*	76
IV	*TECHNICAL ANALYSIS*	114
V	*PORTFOLIO MANAGEMENT*	150

MODULE I

INVESTMENTS

An investment is the current commitment of rupee for a period of time in order to derive future payments that will compensate the investor for;

(1) The time the funds are committed,

(2) The expected rate of inflation, and

(3) The uncertainty of the future payments.

The "Investor" can be an individual, a government, a pension fund, or a corporation. Similarly, this definition includes all types of investments, including investments by corporations in plant and equipment and investments by individuals in stocks, bonds, commodities, or real estate. In all cases, the investor is trading a known rupee amount today for some expected future stream of payments that will be greater than the current outlay.

Definition of Individual Investor: "An individual who purchases small amounts of securities for themselves, as opposed to an institutional investor, also called as Retail Investor or Small Investor."

In today's world everybody is running for money and it is considered as a root of happiness. For secure life and for bright future people start investing. Every time investors are confused with investment avenues and their risk return profile. In fact, investing in various assets is an interesting activity that attracts

people from all walks of life, irrespective of their occupation, economic status, education and family background.

Meaning of Investment

Investment is the employment of funds with the aim of getting return on it. In general terms, investment means the use of money in the hope of making more money. In finance, investment means the purchase of a financial product or other item of value with an expectation of favourable future returns.

Investment refers to the concept of deferred consumption, which involves purchasing an asset, giving a loan or keeping funds in a bank account with the aim of generating future returns. Various investment options are available, offering differing risk-reward trade-offs. An understanding of the core concepts and a thorough analysis of the options can help an investor to create a portfolio that maximizes returns while minimizing risk exposure.

Definition of Investment

Different thinkers interpret the word 'Investment' in their own ways in different periods. However, the ideology or concept of investment is same in between them. Some important definitions of Investment are;

"Sacrifice of certain present value for some uncertain future value" – WILLIAM F. SHARPE

"Purchase of a financial asset that produces a yield that is proportional to the risk assumed over some future investment period" – F. AMLING

There are three concepts of Investment:

1) **Business Investment:** Business investment refers to the money put in a private business. It is the amount with which a person starts his business or the additional amount which he puts in later on. If a business unit is set up and an amount of Rs. 10 lakhs is spent on it, this will be a business investment.

2) **Economic Investment:** The concept of economic investment means addition to the capital stock of the society. The term investment implies the formation of new and productive capital in the form of new construction and producer's durable instrument such as plant and machinery. Thus, an investment, in economic terms, means an increase in building, equipment, and inventory.

3) **Financial Investment:** This is an allocation of monetary resources to assets that are expected to yield some gain or return over a given period of time. It means an exchange of financial claims such as shares and bonds, real estate, etc. People invest their funds in shares, debentures, fixed deposits, national saving certificates, life insurance policies, provident fund etc. In their view, investment is a commitment of funds to derive future income in the form of interest, dividends, rent, premiums, pension benefits and the appreciation of the value of their principal capital. The economic and financial concepts of investment are related to each other because investment is a part of the savings of individuals which flow into the capital market either directly or through institutions.

Objectives of Investments

Investing is a wide spread practice and many have made their fortunes in the process. The starting point in this process is to determine the characteristics of the various investments and then matching them with the individuals need and preferences. All

personal investing is designed in order to achieve certain objectives. These objectives may be tangible such as buying a car, house etc. and intangible objectives such as social status, security etc. Similarly, these objectives may be classified as financial or personal objectives. Financial objectives are safety, profitability, and liquidity. Personal or individual objectives may be related to personal characteristics of individuals such as family commitments, status, dependents, educational requirements, income, consumption and provision for retirement etc.

The objectives can be broadly classified as under:

1) **Main objectives**
   a) Maximizing the return
   b) Minimizing the risk
2) **Subsidiary objectives**
   a) Maintaining liquidity
   b) Hedging against inflation
   c) Increasing safety
   d) Saving tax

1) Main objectives

(a) Maximizing the return

Investors always expect a good rate of return from their investments. The rate of return could be defined as the total income the investor receives during the holding period,

stated as a percentage of the purchasing price at the beginning of the holding period.

$$Return = \frac{End\ Period\ value - Beginning\ Period\ value + Divided}{Beginning\ Period\ Value} \times 100$$

The rate of return is stated semi-annually or annually to help compare among the different investment alternatives. If it is a stock, the investor gets the dividend as well as the capital appreciation as returns. Market return of the stock indicates the price appreciation for the particular stock. If a particular share is bought in 2020 at Rs. 50 and sold in 2021 at Rs. 60 and the dividend yield is Rs. 5, then the return would be calculated as shown below:

$$Return = \frac{Capital\ Appreciation\ and\ Dividend}{Purchase\ Price} \times 100$$

$$Return = \frac{10 + 5}{50} \times 100$$

(b) Minimizing the risk

The risk of holding securities is related to the probability of the actual return becoming less than the expected return. The word 'risk' is synonymous with the phrase 'variability of return'. Investment risk is just as important as measuring its expected rate of return because minimizing risk and maximizing the rate of return are interrelated objectives in investment management. An investment whose rate of return varies widely from one period to another is considered riskier than one whose return does not change much. Every investor likes to reduce the risk of his investment by proper combination of different securities. Investors, however,

differ in their attitude towards risk. Basically, there are two types of risk. These are:

i) **Systematic risk:** Variability in a securities total return that is directly associated with overall moment in the general market or economy is called as systematic risk. This risk cannot be avoided or eliminated by diversifying the investment. Normally diversification eliminates a part of the total risk and the left over after diversification is the non-diversifiable portion of the total risk or market risk. Virtually all securities have some systematic risk because systematic risk directly encompasses the interest rate, market and inflation risk. The investor cannot escape this part of the risk, because no matter how well he or she diversifies, the risk of the overall market cannot be avoided. If the stock market declines sharply, most stock will be adversely affected and if it rises strongly, most stocks will appreciate in value. Clearly market risk is critical to all investors.

ii) **Non-systematic risk:** Variability in a security total return not related to overall market variability is called unsystematic (non-market) risk. This risk is unique to a particular security and is associated with such factors as business, and financial risk, as well as liquidity risk. Although all securities tend to have some non-systematic risk, it is generally connected with common stocks.

2) Subsidiary Objectives

(a) Maintaining Liquidity

Liquidity is an important aspect of any investment option as it determines the ease, time and cost involved in converting the investment into cash. While certain expenses like

purchasing a house, children's education, etc., can be reasonably planned, emergencies such as medical expenses necessitate redemption of an investment prematurely. The marketability of investment provides it liquidity.

Liquidity depends upon marketing and trading facilities. If a portion of the investment could be converted into cash without much loss of time, it helps the investor to meet emergencies. Stocks are liquid only if they command a good market by providing adequate returns through dividends and capital appreciation. Stocks in the Sensex, Nifty and Nifty Junior are more liquid, whereas stocks in the 'Z' group are illiquid.

(b) Hedging against inflation

The rate of return should ensure a cover against inflation to protect against a risk in prices and fall in the purchasing value of money. The rate of return should be higher than the rate of inflation, otherwise, the investor will experience loss in real terms. Growth stocks would appreciate in their values overtime and provide protection against inflation. The return thus earned should assure the safety of the principal amount, regular flow of income and be a hedge against inflation.

(c) Increasing safety

Each investment option is differently affected by different types of risk. Risk affects not only the return on investment but also return of the investment itself. The selected investment avenue should be under the legal and regulatory framework. If it is not under the legal framework, it will be difficult to represent grievances, if any. Approval of the law itself adds a flavour of safety. Though approved by law, the safety of the principal differs from one mode of investment to

another. Investments made with the government, assure more safety than with a private party. From the safety point of view, investments can be ranked as follows: bank deposits followed by government bonds, UTI units, non-convertible debentures, convertible debentures, equity shares and lastly deposits with non-banking financial companies.

(d) Saving tax

Tax is unavoidable. Different income levels and investment options attract different tax rates. The tax rate may vary with the period of investment for a specific option. Certain investments offer tax incentives. The investor tries to minimize the tax outflow and maximize tax returns.

Investment and Speculation

"Speculation is an activity, quite contrary to its literal meaning, in which a person assumes high risks, often without regard for the safety of their invested principal, to achieve large capital gains." The time span in which the gain is sought to be made is usually very short.

Investment involves putting money into an asset which is not necessarily marketable in order to enjoy a series of returns. The investor sacrifices some money today in anticipation of a financial return in future. He indulges in a bit of speculation. There is an element of speculation involved in all investment decisions. However, it does not mean that all investments are speculative by nature. Genuine investments are carefully thought out decisions. On the other hand, speculative investment, are not carefully thought out decisions. They are based on tips, and rumours.

Speculation has a special meaning when talking about money. The person who speculates is called a speculator. A speculator does not buy goods to own them, but to sell them later. The reason is that speculator wants to earn profit from the changes of market prices. One tries to buy the goods when they are cheap and to sell them when they are expensive.

Speculation includes the buying, holding, selling and short selling of stocks, bonds, commodities, currencies, real estate collectibles, derivatives or any valuable financial instrument. It is the opposite of buying because one wants to use them for daily life or to get income from them (as dividends or interest). Speculation should not be considered purely a form of gambling, as speculators do make an informed decision before choosing to acquire the additional risks. Additionally, speculation cannot be categorized as a traditional investment because the acquired risk is higher than average. More sophisticated investors will also use a hedging strategy in combination with their speculative investment in order to limit potential losses.

Key Difference between Investment and Speculation

BASIS	INVESTMENT	SPECULATION
Meaning	The purchase of an asset with the hope of getting returns is called investment.	Speculation is an act of conducting a risky financial transaction, in the hope of substantial profit.
Basis for decision	Fundamental factors, i.e. performance of the company.	Hearsay, technical charts and market psychology.

Time horizon	Plans for a longer time horizon. His holding period may be from one year to few years.	Plans for a very short period. His holding period varies from few days to months.
Risk involved	Assumes moderate risk	Willing to undertake high risk
Intent to profit	Changes in value	Changes in prices
Expected rate of return	Modest rate of return	High rate of return
Funds	An investor uses his own funds.	A speculator uses borrowed funds.
Income	Stable	Uncertain and Erratic
Behaviour of participants	Conservative and Cautious	Daring and Careless
Examples	The stock market, Saving accounts, Government bonds, factor investing, mutual funds, etc.,	Gambling, Momentum in vesting, growth stocks, foreign currencies, crypto-currencies

Investment and Gambling

The term gambling dates back to antiquity. Most dictionaries refer to 'gamble' as an act involving an element of risk. In particular, a gamble involves taking on risk without demanding compensation in the form of increased expected return. Gambling exhibit some or all of the following characteristics:

i) Gambling is a typical, chronic and repetitive experience.

ii) Gambling absorbs all other interests

iii) The gambling displays persistent optimism without winning

iv) The gambler never stops without winning

v) The gambler eventually risks more than he or she can afford

vi) The gambler seeks and enjoys a strange thrill from gambling, a combination of pleasure and pain.

A gamble is usually a very short-term investment in a game or chance. Gambling is different from speculation and investment. First, the time horizon involved in gambling is shorter than in speculation and investment. The results are determined by the roll of a dice or the turn of a card. Secondly, people gamble to entertain themselves. Earning an income from gambling is a secondary factor. Thirdly, the risk, taken in gambling is different from that of investment. Gambling enjoys artificial risks, whereas commercial risks are present in investment activity. Risk and return trade-off is not found in gambling and negative outcomes are expected. On the other hand, during investment, the analysis of risk and return is carried out, as a result of which positive

returns are expected by investors. Finally, financial analysis does not reduce the risk proportion involved in gambling.

Key Difference between Investment and Gambling

Basis	Investment	Gambling
Introduction	Purchasing financial instruments and assets to gain profit in the future	Wagering money in uncertain activities to gain instant profit
Aim	Constant future income	Immediate return
Time Horizon	Long	Short
Risk Involved	Less	High
Expected Return	Average	Very high
Income	Certain and stable	Uncertain and unstable
Based On	Knowledge and skill	Luck and chance
Legality	Yes	Several restrictions
Investor's Attitude	Cautious and disciplined	Aggressive
Examples	Share, bond, debenture, etc.,	Card, lottery, betting, etc.,

Factors Affecting Investment Decisions

Investment decision-making process is concerned with how an investor should proceed in making a decision about what marketable securities to invest in, how extensive an investment should be and when the investment should be made. Investment decisions are influenced by various motives. Some people invest in a business to acquire control and enjoy the prestige associated with it. Some people invest in expensive villas to display their wealth. Most investors, however, are largely guided by the pecuniary motive of earning a return on their investment. An individual invests 'postpone consumption' only in response to a rate of return, which must be suitably adjusted for inflation and risk. This basis postulate, in fact, unfolds the nature of investment decisions.

Investment decisions are based on availability of money and information on the economy, industry, and company and the share prices ruling and expectations of the market and of the companies in question.

Following are factors that affect the investment decisions:

1) **Amount of Investment:** The amount of funds available for investment will influence the form of investment. In case of an individual investor the amount may be small. There are a number of avenues for making such investments like bank deposits, mutual funds, etc. if the investible funds are more than transferable financial securities like shares, debentures etc. may be purchased. Investment in real estate can be thought of if the amount is large.

2) **Purpose of Investment:** The purpose of investment must be very clear before making it. The purpose makes one

think in the same way. The object of an individual investor may be to save tax, earn fixed return, appreciation in the value of securities, etc. If the purpose is to save tax then master equity linked schemes, public provident fund, general provident fund etc., may be the avenues of investment. Similarly other factors will be taken into account while making an investment. The purpose of an enterprise investor will be different than that of an individual investor. A business enterprise may like to employ idle funds for short period to earn some income. If the management wants to earn higher returns than speculative securities will be preferred. So the purpose of investment greatly influences such decisions.

3) **Type of Investment:** Another important factor which influences investment decision is the selection of securities. A decision about where to invest is very important. A number of securities are available in the market and which one suits the investor's objective should be taken up. Varied securities may be taken up to suit different needs. If provident fund of employees is to be invested then fixed return securities will be preferred, treasury bills may be the priority if idle funds are to be employed for a short period. The company whose securities are being taken up should also be taken into account. An analysis of present performance and future appraisal of the company's working should be taken up before selecting its securities.

4) **Timing of Purchase:** The time of purchasing securities is very important. A proper timing of purchase and sale of securities can bring profits to the investor. The securities should be purchased when their prices are low and should be sold when their prices have arisen. Normally, investors,

do not time their transactions properly. When prices are low they keep on hoping that prices will still go down. On the other hand, they do not sell when prices are higher still hoping that prices will still rise. A careful analysis of price changes may help the investor to decide the proper timing of purchase and sale of shares.

5) **Mood of the Market:** Investment decision depends on the mood of the market. As per the empirical studies, share prices depend on the fundaments of the company only to the extent of 50% and the rest is decided by the mood of the market and the expectations of the company's performance as well as its share price. These expectations depend on the analyst's ability to foresee and forecast the future performance of the company. For, price paid for a share at present depends on the flow of returns in future, expected from the company.

6) **Company's Performance:** The decision to invest will be based on the past performance, present working and the future expectations of the company's performance, both operationally and financially. These, in turn will influence the share prices.

7) **Investor's Perception:** Investment decision will also depend upon the investor's perception on whether the present share price is fair, overvalued or undervalued. If the share price is fair he will hold it (Hold Decision), if it is overvalued, he will sell it (Sale Decision) and if it is undervalued, he will buy it (Buy Decision). These are general rules, but exceptions may be there.

8) **Investor's Preferences:** The investment decision may also depend on the investor's preferences, moods, or

fancies. Thus an investor may go on spending spree and invest in cats and dogs of companies, if he has taken a fancy or he is flooded with money from lottery or prizes. A rational investor would however make investment decisions on scientific study of the fundamentals of the company and in a planned manner.

9) **Environmental Considerations:** Many times, investor has to take into account the environmental factors in investment management. His past background, family requirements, the assets of neighbours or of colleagues and other external factors may influence his investment decisions.

People in rural and semi-urban areas are influenced by their immediate environment and access to avenue. The agriculturists invest in ploughs, tractors and other requirements needed for his occupation and environment. Beyond these, he invests in gold and silver or real estate due to the influence of environment as people are assessed in those places by the amount of gold and real estate, they hold and possess.

On the other hand, the environment in urban and metropolitan centers is different. The alternatives available to them are more varied. The funds are invested in vehicles, consumer durables, mutual funds, corporate securities, and various other instruments. In many semi-urban and urban areas, housing finance companies, finance and investment companies and chit funds attract the public funds with attractive returns and incentives.

Process of Investment Decisions

The investment process involves a series of activities leading to the purchase of securities or other investment alternatives. The investment process can be divided into five stages:

(1) Framing of the investment policy

(2) Security analysis

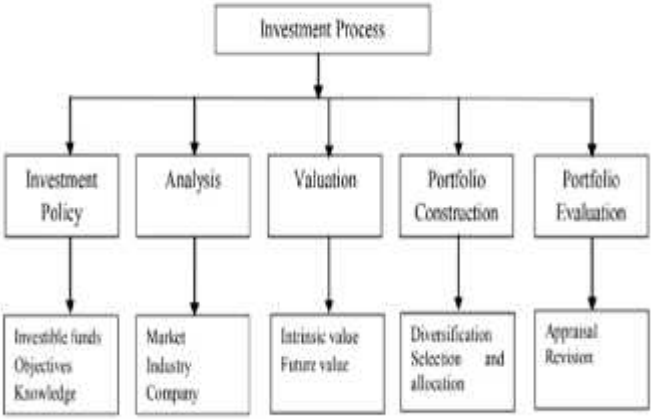
(3) Valuation

(4) Portfolio construction

(5) Portfolio evaluation

(1) Framing of the Investment Policy

For systematic functioning, the government or investor, formulates the investment policy before proceeding to invest. The essential ingredients of the policy are investible funds, objectives and knowledge about investment alternatives and the market.



(a) Investible funds: The entire investment procedure revolves around the availability of investible funds. Funds may be generated through savings or from borrowings. If the funds are borrowed, the investor has to be extra careful in the selection of investment alternatives. He must make sure that the returns are higher than the interest he pays. Mutual funds invest their stockholders' money in securities.

(b) Objectives: The objectives are framed on the premises of the required rate of return, need for regular income, risk perception and the need for liquidity. The risk taker's objective is to earn a high rate of return in the form of capital appreciation, whereas the primary objective of the risk-averse is the safety of principal.

(c) Knowledge: The knowledge about investment alternatives and markets plays a key role in policy formulation. Investment alternatives range from security to real estate. The risk and return associated with investment alternatives differ from each other. Investment in equity is high-yielding but faces more risk than fixed income securities. Tax sheltered schemes offer tax benefits to the investors.

The investor should be aware of the stock market structure and functions of the brokers. The modes of operation are different in the Bombay Stock Exchange (BSE), National Stock Exchange (NSE) and Over-the-Counter Exchange of India (OTCEI). Brokerage charges are also different. Knowledge about stock exchanges enables an investor to trade the stock intelligently.

(2) Security Analysis

Securities to be bought are scrutinized through market, industry and company analyses after the formulation of investment policy.

(a) Market analysis: The stock market mirrors the general economic scenario. The growth in gross domestic product and inflation is reflected in stock prices. Recession in the economy results in a bear market. Stock prices may fluctuate in the short- run but in the long-run, they move in trends, i.e. either upwards or downwards. The investor can fix his entry and exit points through technical analysis.

(b) Industry analysis: Industries that contribute to the output of major segments of the economy vary in their growth rates overall contribution to economic activity. Some industries grow faster than the GDP and are expected to continue in their growth. For example, the information technology industry has experienced a higher growth rate than the GDP in 1998. The economic significance and the growth potential of the industry have to be analysed.

(c) Company analysis: The purpose of company analysis is to help the investors make better decisions. The company's earnings, profitability, operating efficiency, capital structure and management have to be screened. These factors have a direct bearing on stock prices and investor's returns. The appreciation of stock value is a function of the performance of the company. A company with a high product market share is able to create wealth for investors in the form of capital appreciation.

(3) Valuation

Valuation helps the investor determine the return and risk expected from an investment in common stock.

(a) The intrinsic value of the share is measured through the book value of the share and price earning ratio. Simple discounting models also can be adopted to value the shares. Stock market analysts have developed many advanced models to value shares. The real worth of the share is compared with the market price, and investment decisions are then made.

(b) Future value: The future value of securities can be estimated by using a simple statistical technique like trend analysis. The analysis of the historical behaviour of price enables the investor to predict the future value.

(4) Construction Portfolio

A portfolio is a combination of securities. It is constructed in a manner so as to meet the investor's goals and objectives. The investor should decide how best to reach the goals with the securities available. The investor tries to attain maximum return with minimum risk. Towards this end, he diversifies his portfolio and allocated funds among the securities.

(a) Diversification: The main objective of diversification is the reduction of risk in the form of loss of capital and income. A diversified portfolio is comparatively less risky than holding a single portfolio. Several modes are available to diversify a portfolio.

i) Debt and equity diversification: Debt instruments provide assured returns with limited capital

appreciation. Common stocks provide income and capital gain but with a flavour of uncertainty. Both debt instrument and equity are combined to complement each other.

ii) **Industry diversification:** Industries' growth and their reaction to government policies differ from each other. Banking industry shares may provide regular returns but with limited capital appreciation. Information technology stocks yield higher returns and capital appreciation, but their growth potential in the post-global crisis years was unpredictable. Thus, industry diversification is needed, and it reduces the risk.

iii) **Company diversification:** Securities from different companies are purchased to reduce the risk. Technical analysts suggest that investors buy securities based on price movement. Fundamental analysts suggest the selection of financially sound and investor-friendly companies.

(b) Selection: Securities have to be selected based on the level of diversification, industry and company analyses. Funds are allocated for selected securities. Selection of securities and the allocation of funds seal the construction of portfolio.

(5) Portfolio Evaluation

A portfolio has to be managed effectively. Efficient management calls for evaluation of the portfolio. This process consists of portfolio appraisal and revision.

(a) Appraisal: The return and risk performance of security varies from time to time. The variability in

returns of securities is measured and compared. Developments in the economy, industry and relevant companies from which stocks are bought have to be appraised. The appraisal warns of the loss and steps can be taken to avoid such losses.

(b) Revision: It depends on the results of the appraisal. Low-yielding securities with high risk are replaced with high-yielding securities with low risk factor. The investor periodically revises the components of the portfolio to keep the return at a level.

Investment Policy

Investment policy includes setting of investment objectives. The investment policy should have the specific objectives regarding the investment return requirement and risk tolerance of the investor. For example, the investment policy may define that the target of the investment average return should be 15 % and should avoid more than 10 % losses. Identifying investor's tolerance for risk is the most important objective, because it is obvious that every investor would like to earn the highest return possible. But because there is a positive relationship between risk and return, it is not appropriate for an investor to set his/ her investment objectives as just "to make a lot of money". Investment objectives should be stated in terms of both risk and return.

The investment policy should also state other important constrains which could influence the investment management. Constrains can include any liquidity needs for the investor, projected investment horizon, as well as other unique needs and preferences of investor. The investment horizon is the period of time for investments. Projected time horizon may be short, long or even indefinite.

Setting of investment objectives for individual investors is based on the assessment of their current and future financial objectives. The required rate of return for investment depends on what sum today can be invested and how much investor needs to have at the end of the investment horizon. Wishing to earn higher income on his / her investments investor must assess the level of risk he /she should take and to decide if it is relevant for him or not. The investment policy can include the tax status of the investor. This stage of investment management concludes with the identification of the potential categories of financial assets for inclusion in the investment portfolio. The identification of the potential categories is based on the investment objectives, amount of investable funds, investment horizon and tax status of the investor.

Investment Avenues

Today‘s investor has a wide array of investment avenues and he can choose the one that suits his preferences. Following are the various asset classes that the investor can choose from,

1. **Equity**
2. **Debentures**
3. **Bonds or Fixed Income Securities**
    a) Government Securities
    b) Savings bonds
    c) Private Sector debentures
    d) PSU bonds
    e) Infrastructure Bonds

4. **Money Market Instruments**
    a) Treasury Bills
    b) Certificate of Deposits
    c) Commercial Papers
    d) Repos
    e) LIQUID BEES
5. **Non-marketable Financial Assets**
    a) Bank deposits
    b) Flexi Deposits
    c) Post office deposits (POTD)
    d) Monthly income scheme of the post office (MISPO)
    e) National Savings Certificate (NSC)
    f) Company Deposits
    g) Employees Provident Fund Scheme (EPF)
    h) Public Provident Fund (PPF)
6. **Real Estate**
    a) Residential House
    b) Commercial Property
    c) Agricultural Land
    d) Suburban Land

e) Time Share in Holiday Resort

f) Real Estate Investment Trust (REIT)

7. Precious Objects

a) Gold & Silver

b) Gold ETFs

8. Insurance Policies

a) Endowment Assurance

b) Money Back Plans

c) Whole Life Assurance

d) ULIP

e) Term Assurance

f) Immediate Annuity

g) Deferred Annuity

9. Pension Funds

a) NPS

b) Private Pension Funds

10. Mutual Funds

1. Equity

Equity is the investment media that represent an ownership position, that is, in which the investor in stocks or certain options

is an owner of the firm and is thus entitled to a residual share of profits. The equity ownership can be broadly divided into direct equity investment through capital markets and indirect equity investment through institutions.

Equity stock or equity shares represent an ownership position and the equity shareholders are the owners of the firm having the voting power. The equity shares enables the investors the right to the earnings of the firm and also run the risk of receiving nothing if earnings are insufficient to cover the obligations of the firm. Equity shares earn a return based on two sources – dividends and capital gains.

(a) Dividends are received only if the company earns sufficient money and the board of directors deems it proper to declare a dividend.

(b) Capital Gains arise from an increase in the market price of the equity, which is generally associated with a growth in earnings per share. The share prices have been quite volatile due to various factors that are external and internal.

Hence there is a need for careful analysis in the selection of securities for purchase and sale, and also in the timing of these investment decisions, since equity shares do not have maturity date at which a fixed value will be realized.

2. Debentures

Investors look forward for secured returns on a regular basis and such instruments are in great demand. One such option is the Non-Convertible Debentures. There has been a series of NCD issues recently and many more are in pipeline. A NCD is a fixed income debt paper issued by a Company. The issuer agrees to pay a fixed

interest on the investment. The NCDs are for a long term generally ranging from 5 to 15 years. These instruments have to be normally rated by the credit rating agencies. A good rating indicates reasonable assurance of safety and return of principal as well as interest. The risk element shall be high if the rating is not so good. These NCDs may be either secured or unsecured. The secured debentures are backed by assets; in case the issuer is not able to fulfill his obligations, the assets are liquidated in order to repay the investors holding the debentures. The secured NCDs offer lower interests as compared to that of unsecured ones, due to risk differential. The interest earned on these instruments are taxable and is also liable for tax-deducted at source. It is also to be noted that there is a very poor secondary market for NCDs in India, thereby making these instruments illiquid.

3. Bonds or Fixed Income Securities

Bonds refer to a long-term investment avenue which has a specified amount or rate of interest and specified maturity date. It is a marketable legal contract that promises to pay its investors a stated rate of interest and to repay the principal at the maturity date. Bonds differ according to their provisions for repayment, security pledged, and other technical aspects.

(a) Government Bonds

Government bonds are the tradable instrument issued either by Central Government or State Government to finance their activities. The State Government issues these bonds as State Development Loans (SDLs). Bonds issued by municipalities and public institutions are also deemed as Government bonds. Investors can choose this as an investment avenue, which provides returns in terms of coupons. These can be held in dematerialized form and has a very secondary market, thereby

providing high liquidity. These instruments are fully free of default risk. However, the returns earned thereof is relatively low.

(b) Savings Bonds

Savings bonds are the bonds issued by RBI, which are available for investment at various banks, designated by RBI. These bonds have the feature of both cumulative and noncumulative interest payments. Generally these bonds earn a coupon rate of interest at 8% per annum. The minimum investment is Rs.1,000 and in multiples of Rs. 1,000 thereof. Generally these bonds have a maturity period of 6 years. These bonds are taxable, that is, the interests earned from these are liable to income tax. However, these investments are not subject to wealth tax. These bonds are not transferable, although, nomination facility is available for individual investors.

(c) Private Sector bonds

Private sector bonds or corporate bonds are the means by which the private firms borrow money directly from the public. The investors can invest in these bonds and they generally pay semi-annual coupons over the entire term of the bond and also return the face value to the investor upon maturity. These bonds carry a higher rate of interest over the Government bonds, since the inherent default risk is higher. The private sector bonds include all listed debt securities issued by institutions such as banks, bodies corporate and companies. In order to issue these bonds, they have to be credit rated. The credit rating helps the investor to assess the credit worthiness of the issuer and to decide accordingly. The corporate bonds are either,

i) interest-bearing or

ii) issued at a discount and redeemed at face value

The investor of these bonds does not have a claim on the ownership to the company, but they have only creditor-ship claim.

(d) PSU bonds

PSU bonds are the bonds issued by Public Sector Undertakings in which the government shareholding is generally more than 51%, wherein these agencies tend to channelize the credit to finance their needs. These bonds provide an investment opportunity, wherein the interest payments are made at pre-determined intervals and the principal is repaid upon maturity. The returns on these bonds are relatively higher that Government bonds and lesser than corporate bonds.

Mostly, these PSU bonds are issued by the way of private placements, and hence there is a little room for individual investors. However, it does not completely deprive the individual or retail participation. There is also a secondary market, through which these instruments can be purchased.

PSU bonds are of two types, namely, taxable bonds and tax-free bonds. Tax-free bonds are bonds where the interest earned thereon is exempted from tax. These bonds are issued with prior approval from the Government through the Central Board for Direct Taxes (CBDT).

Infrastructure Bonds

Infrastructure bonds are long-term bonds notified by the Central Government which are eligible for a deduction under section 80CCF. Only the bonds issued by IFCI, LIC, IDFC, NBFCs which are classified as 'Infrastructure Finance Companies' by the RBI are eligible for the aforesaid deduction. The investor may invest in these bonds, but have a minimum tenure of 10 years and a lock-in period of 5 years. After the lock-in period of 5 years, the investor may, exit in the secondary market. The investment in these bonds up to Rs. 20,000 is eligible for deduction u/s 80 CCF. However, the deduction u/s 80 CCF is disallowed with effect from FY 2012-13. Yet, this remains as one of the investment avenue for a long-term horizon.

4. Money Market Instruments

Money market instruments are the investment avenues which have high liquidity and short term maturity, generally less than a year. These instruments provide an opportunity for the investor to park his/her money for a short-term varying from few days to few weeks to few months.

(a) Treasury Bills

Treasury bills are another investment vehicle available for the investors who can invest for a period of less than a year. These are issued by Government of India and currently three variants of treasury bills are issued, namely, 91-day treasury bills, 182-day treasury bills and 364-day treasury bills. The subscriptions can be made for a minimum of Rs.10, 000 and in multiples of Rs.10, 000. Treasury bills are issued based on auction and these auctions are held on Negotiated Dealing System (NDS). The bidders can submit their bids electronically. The

successful bidders need to pay the bid amount on the next working day of the auction date.

(b) Certificate of Deposits

Commercial deposits are short-term instruments issued by schedule banks, having a maturity ranging from 7 days to a year. These are similar to promissory notes and are issued in Demat form. CDs are issued in denomination of Rs. 1, 00,000 and in multiples of Rs. 1,00,000, thereon. The interest rate on these are market driven. Commercial deposits are like bank term deposits, except for the fact that they are freely negotiable and transferable. Commercial deposits normally earn relatively higher return as compared to bank term deposits. There can be traded in secondary market and there is no lock-in-period. These instruments can be purchased by individuals, corporate, trusts and even NRIs. They have to be compulsorily credit rated by credit rating agencies. SBI DFHI is the most active player in secondary market of CDs.

(c) Commercial Papers

Commercial papers are another investment vehicle in money-market asset class. Indian money market reforms were responsible for introduction of commercial papers. These are short-term monetary funds, issued in the form of promissory notes by large corporations. They are not backed by any form of collaterals and hence are unsecured. The corporations issuing these papers must be compulsorily credit rated. The issuers of commercial paper create supply while the subscribers or investors create demand for these papers. The main issuers of commercial papers are large corporations and subscribers are majorly the banking companies. The other subscribers are individuals, NRIs and FIIs. Commercial papers

are generally issued at a discount to face value and redeemed at par value. The face value of these papers are in denominations of Rs.5,00,000 and in multiples thereof. The maturity period of these papers, range between 7 days and a year.

(d) Liquid Bees

Liquid Bees is a peculiar investment vehicle which are listed and traded on a recognized stock exchange, wherein the investment is made in a basket of money-market instruments like call-money, short-term government securities or treasury bills, commercial paper, certificate of deposits and other money-market instruments of short maturities. Safety and liquidity are the two most important factors considered in Liquid Bees. The unique feature of Liquid Bees is that the price risk would be minimized. These need to be credit rated and can be traded only in electronic mode (Demat). Liquid Bees is the alternate mode for managing cash-in-hand for the short-term, instead of it lying idle in the bank. The income received from these investments is exempt from tax.

5. Non-Marketable Financial Assets

A significant portion of the investment in financial assets by an individual or a household is parked in non-marketable financial assets such as, bank deposits, post-office deposits, PPF, NSC, etc. The unique feature of these assets is that there is a prevalence of personal relationship between the investor and the issuer. This personal transaction touch makes the investor comfortable and moreover these investments are quite safe. Though these investments cannot be traded, it ensures high degree of safety and reasonable liquidity. The purpose of these assets is to provide a good savings plan to individuals for future purposes or a regular

stream of income. The risks in these investments result from two major economic factors, namely, inflation and interest rates. A relatively high inflation shall reduce the real returns and a higher interest rates shall increase the opportunity cost thereby reduce the flair for these investments.

(a) Bank deposits

Bank deposits are most popular and the simplest investment avenue for an individual investors, where he opens an account with a bank and parks his money. There are basically four types of bank deposits, namely,

i) Savings deposits

ii) Fixed deposits

iii) Current deposits

iv) Recurring deposits

The current a/c deposits do not earn any interest, while the other three deposits earn interest on the deposited amount that is payable by the bank to the depositor.

Fixed deposits are the popular scheme for investment purpose available for households and individual investors, where safety is assured. The deposit of a certain amount is made for a fixed period at the pre-determined market rate of interest. The interest is payable on a periodic basis and also reinvestment of interest type of fixed deposits are available. At the end of fixed period, the amount with accrued interest is paid back to the depositor.

Recurring deposits are also quite popular means of investment by the households, where the depositor makes

periodical investment for a fixed duration. This enables the individual investor to build a corpus amount with small deposits on a regular basis. Recurring deposits are very popular among salaried class, especially for those who can save few hundreds to few thousands per month. This scheme is quite useful to people who cannot afford to have a large amount of savings and thus cannot use fixed deposit scheme of the bank. The depositor deposits the amount periodically, generally every month, and the banks promise to pay the interest at the pre-determined rates on these deposits. Upon maturity, the investor is paid the maturity value, which denotes principal coupled with interest accrued.

(b) Flexi Deposits

Flexi deposits are unique type of savings deposit account, which is a blend the characteristics of both savings account and the fixed deposit account. In this deposit scheme, the balance in excess of a stipulated amount is automatically converted to fixed deposit for a default term of one year. This is a savings-cum-fixed deposit account, where the cash limit of the savings deposit is fixed and the balance of the idle cash in the savings account is converted into earning mode of fixed deposits. These flexi deposits provide the liquidity associated with the savings deposit as well as the higher returns by investing the surplus cash into fixed deposits.

(c) Post Office Term Deposits (POTD)

Post office deposits are very popular means of investment by individuals and households in India, since it is one of the safest and easiest modes of investments. The investment in post office term deposit is quite similar to that of fixed

deposits offered by the bank, but with additional features. POTD has the maturity periods ranging from 1 year, 2 years, 3 years and 5 years. The POTD can be opened with a very small amount of 200 and in its multiples; however, there is no upper limit. The rates offered by POTD are slightly higher than the bank deposits and very safe mode of investment, since government backing is available.

(d) Monthly Income Scheme of the Post Office (MIS)

MIS is one of the most popular investment avenue among rural investors and not that well-known amongst urban population. It is the scheme where there is a defined return on the investment. The interest is calculated on a yearly basis, but payable every month. The interest is payable from the date of making the investment and not from the start of the month. The maturity period is five years. The unique feature of this scheme is that the investor is also eligible for a 5% bonus if he retains the scheme for entire tenure, in addition to the regular interest. However, w.e.f. 1st January 2011, this bonus is not applicable. The minimum amount eligible for investment is Rs.1,500 and the maximum amount is Rs.4,50,000 in case of individuals and Rs.9,00,000 in case of joint account holders. The drawback of this scheme is that this investment is not eligible for deduction u/s 80C, which explain the fact that it is not popular amongst urban investors.

(e) National Savings Certificate (NSC)

National Savings Certificate is another opportunity for investors, wherein, they can keep their money invested for a slightly long period and want this amount to compound. The investment in NSC is eligible for deduction u/s 80C. However, the interest earned thereon is taxable. This is an

excellent avenue for those who want to stay invested and allow the investment to grow over a period of time. NSCs are available in the denominations of Rs.100, Rs.500, Rs.1000, Rs.5,000 and Rs.10,000. NSCs can be also purchased in demat form. The NSC VIII issue have a maturity period of 5 years and NSC IX issue has a maturity of 10 years. This scheme is best suitable to government employees, businessmen and other salaried class, who are income tax assesses.

(f) Company Deposits

Company deposits are very similar to bank fixed deposits that are made by the investors with Financial Institutions and NBFCs for a fixed period at a pre-determined fixed rate of interest. The interest paid on these deposits is relatively higher than the bank deposits, since there is a higher degree of risk associated. The risks associated with these company deposits are credit risk and interest rate risk. Although, there is a higher risk involved, the investors are motivated to invest in these instruments due to higher returns earned thereof.

(g) Employees Provident Fund Scheme (EPF)

Employee Provident Fund is a prominent platform of savings in India amongst the organized workforce. Employee Provident Fund Scheme is an investment avenue, wherein, the employees from both the private sectors and public sectors can invest a portion of their salary every month and build a corpus for future. Generally, the contribution is made by both the employee and the employer. The contribution made by the employee is eligible for deduction u/s 80C of Indian Income Tax Act of 1961. Interest is paid on amount deposited and it is accumulated with the fund. The fund gets built and the

investor can use it for his retirement of future plans. Employee Provident Fund Organization, a statutory body of the Government of India, established under the Ministry of Labour and Employment oversees the functioning of EPF.

(h) Public Provident Fund (PPF)

Public Provident Fund is a long-term debt scheme of Government of India, wherein, any individual in India can invest in this scheme and can earn a decent tax-free return on the same. The interest rate on PPF is generally slightly higher than that of interest rates offered by Bank Fixed Deposits. PPF account can be opened in any post office or designated bank branches. The PPF investors prefer to maintain their PPF account with banks rather than Post office, since banks facilitate online transfer of funds and online deposits. The minimum amount to be deposited in a PPF account is Rs.500 and the maximum is Rs.1,00,000 per annum. PPF account can be closed after a period of fifteen years from the date of opening the account. However, the investor can extend for a further period of five years. There is also a lock-in-period of initial five years. Another unique feature of PPF account is that the account holder can avail loan from the third year onwards. He can get a loan up to 25% of the amount outstanding at the end of immediately preceding the year in which the loan is applied for. Investment in PPF is eligible for deduction u/s 80C of Income Tax Act of 1961 and also, the tax earned thereon is tax-free.

6. Real Estate

Real estate is one of the most sought after investments, which the investors are excited about. The rapid rise in real estate prices is very attractive and the investor looks forward this as both an

investment avenue and a basic shelter to live in. The real estate investors think it is wise decision to invest in a real estate, since there are numerous advantages of investing in real estate. There is an ever growing capital appreciation, rental income, real and tangible asset, safety, etc. The real estate has emerged as an asset class and increasingly becoming a global asset class. India‘s large market, favourable demographics, higher disposable income and rising domestic demand are key ingredients for the growth in real estate sector in India. The investment in real estate may take any of the following form, namely,

(a) Residential House

(b) Commercial Property

(c) Agricultural Land

(d) Suburban Land

(e) Time Share in Holiday Resort

7. Precious Objects

Precious objects are those items that are generally small in size, but highly valuable in monetary terms. These are normal physical product or metals that are used as traditional store of wealth. The most important precious objects are gold, silver, precious stones and art objects. There is an increased use of precious objects as an investment vehicle, since the returns from these are quite outstanding, whereas the risks are comparatively lower. Investment in these precious objects can be made directly in the product or through derivative instruments like futures or through mutual funds with a directive of investing in the specified commodities.

(a) Gold & Silver

Gold has been an important part of diversified investment portfolio. It is being respected throughout the word for its value and rich history. It is also considered as a way to pass on and preserve wealth from one generation to the next. There has been a paradigm shift in the gold‘s preference, as consumers are turning into investors. Gold, as an investment option is gaining momentum and popularity as compared to ornamental value. Around 40% of the gold buying in India is for investment purpose. (Source: Business Standard, 15th December 2002). Gold, despite the surge in price has lead to spurt in demand. Gold has been used as a hedge against other investment options. Gold ensures that there is the most enduring benefit and has the ability to stabilize a portfolio and protect it against market fluctuations. Silver, in the recent times, has gained sheen as an investment avenue. It has been viewed as safe haven and regarded as a form of money and store of value. Besides investing in physical silver, investors have shown keen interest in exchange traded funds. Analysts have predicted silver to rise faster than gold in the next decade. Silver is relatively volatile than gold and silver is positively correlated to industrial demand.

(b) Gold ETFs

Gold Exchange Traded Funds refer to buying gold in electronic form. Gold ETFs are units representing physical gold in Demat form. Gold ETF is much easier form of investing in gold. The Gold ETF shall ensure to provide the returns that closely correspond with the real price of gold. The investor can buy a gram at a time and hence has the avenue to build a good gold portfolio, by accumulating gold over a period of time. The Gold ETFs are open-ended funds that can

be traded on the stock exchange, thereby providing high liquidity. The Gold ETFs aims to provide the investors to participate in the gold market and to offer the investors a simple and cost-efficient way to access the gold market by providing a return equivalent to movement in the gold spot prices. Gold ETFs have quite a lot of benefits than actual gold, like there are not premium charges, making charges, wastage charges, delivery charges, no worries of theft and quite easy to sell. The best part of Gold ETF is that there is no need to pay sales tax, securities transaction tax, GST or wealth tax.

8. Insurance Policies

Insurance is a contract, wherein the individual or an entity gets the protection against the losses resulting from some unexpected or uncertain event. The concept of insurance is that a group of people exposed to similar risk come together and make contributions towards formation of a pool of funds. A person, suffering an actual loss on account of such risk, is compensated out of the same pool of funds. The interesting aspect of insurance is that it serves the twin-objective of protection as well as investment. The investor has to primarily separate the insurance portion from the investment portion of the premium that he pays, so that he knows, the quantum of each portion. The total premium paid minus the amount evaluated as the cost of insurance must be considered as the amount invested. The yield must be calculated based on this amount to evaluate the investment. Though insurance is not the best available investment avenue, there are sufficient reasons for the investor to believe that it can be highly lucrative avenue to facilitate savings. The very essence of insurance is to enable protection to the family coupled with returns on the investment.

(a) Endowment Assurance

Endowment assurance is a policy which not only provides protection to the family of the life assured in case of early death, but also assures a lumpsum at a desired age. The premiums are generally paid for a fixed term or until death whichever is earlier. The lumpsum received at the end of the term can be reinvested to provide an annuity during the remainder of the life. The salient features of endowment assurance are, a. Moderate premium b. High bonus c. High liquidity d. Savings oriented LIC‘s Jeevan Saral and Jeevan Anand are the two popular endowment policies in India.

(b) Money Back Plans

In case of money back policy, the insured gets periodic receipt of partial survival benefits during the term of the policy. Money back policy protects the family‘s financial interests from unforeseen situation like death or critical illness of the policy holder. In this case, the periodic pay-outs ensure wealth creation for meeting financial commitments at important phases in life. A good money back policy has lower risk, assured returns and also gives tax benefits. At the time of maturity, the policyholder gets the remaining amount of the survival benefits plus the accrued bonus. In case of death of the life assured within the term, the total sum insured is paid to the nominee, irrespective of earlier survival benefits. Money back policy can be availed for either 20 years or 25 years. Generally, periodic payments are made every 5 years. At the end of the period, the remaining amount plus bonus is paid to the insured. The amount invested in the money back policy is eligible for deduction u/s 80C of Income Tax Act of 1961.

(c) Whole Life Assurance

A whole life assurance is a policy where premium is for a term and this premium has two components. The first component is the insurance component and the second component is the investment component. The insurance component pays an assured amount upon death of the insured and the investment component the wealth that the policyholder can withdraw or borrow against. The whole life insurance is different form term assurance. In case of term assurance, the amount is paid only in case of death during the term of the policy, but the whole life assurance always pays out eventually. Hence, whole life assurance is comparatively expensive than term assurance. This policy is mainly devised to create a wealth for legal heirs of the policyholders. The premium under this policy are payable up to the age of 80 years of the policyholder or for a term of 35 years whichever is later.

(d) ULIP

ULIP is a unique investment avenue which blends the benefits of both insurance and investment under a single integrated plan. ULIP is an avenue that focuses on safety on insurance as well as wealth creation opportunities. In case of ULIPs, a portion of investment is apportioned towards providing life cover and the residual portion is invested in a fund to be invested in equity or bonds. The investment value is market driven. ULIPs are gaining popularity since they offer dual role of protection for life and investment plan simultaneously. The amount invested in ULIP is eligible for deduction u/s 80 C of Income Tax Act of 1961. There is however a lock-in-period of 5 years for these ULIPs. ULIP returns are directly linked to market performance and investment risk in investment portfolio is entirely borne by the policyholders. The invested

portions of the premium after deducting for all the charges and premium for risk cover under all policies in a particular fund. The value of the fund units with accrued bonus is payable on maturity of the policy.

(e) Term Assurance

Term assurance is the purest and the simplest form of the life insurance providing coverage for a defined period of time, at a fixed rate of payment. In case of death of the insured during the relevant term, the benefit is payable to the nominee. There is no survival benefit payable to the insured. Further, if the coverage has to be extended beyond the term, he has to pay generally a higher premium for the continual. Term assurance is the least expensive mode of substantial life cover over a particular period of time. The term assurance just provides a specific amount of coverage for a specified period of time, but does not involve any investment component. However, the premium paid for term assurance is eligible for deduction u/s 80C of Income Tax Act of 1961.

(f) Immediate Annuity

Immediate annuity is an investment avenue, wherein a single lumpsum premium is paid and in return a guaranteed income starts flowing almost immediately to the insured. In this case, the insured receives a guaranteed gross income throughout his life time or over a fixed period. In addition to the regular income upon the death of the insured, the family shall receive the death benefits. However, there is also an option, wherein the nominee shall receive regular income upon death of the insured. The immediate annuity plan is best suited for retired personnel, who anticipate a regular and a guaranteed amount in place of pension. The regular stream of income can be

chosen at the option of the insured either monthly, quarterly, half-yearly or annually.

(g) Deferred Annuity

Deferred annuity is an investment vehicle, wherein the investor starts savings his money by paying regular premium and builds a corpus. Later, the insured can elect to receive income from the corpus that has been built over a period of time. Typically, this plan has two phases, namely, savings phase and income phase. In the savings phase, the investor invests money into the account on a periodical basis. The income phase is a period, where the investor converts the amount invested into an annuity and receives periodical income. The deferred annuity also consists of death benefit to the nominee upon death of the insured. Deferred annuities are designed primarily as retirement savings accounts. The amount invested into this account is eligible for deduction u/s 80C of the Income Tax Act of 1961.

9. Pension Funds

Pension fund is a qualified retirement plan set up by an entity – a corporation, labour union, government or other organization. Pension fund is a retirement plan, in which an investor makes a contribution into an account periodically. In other words, pension funds are type of retirement plan, wherein an investor pays part of his current income towards retirement income. These contributions are invested on behalf of the investor, who may withdraw after retirement. There are two types of pension plans, namely, defined-benefit plan and defined-contribution plan. In case of defined-benefit plan, the investor is guaranteed to receive a fixed amount upon retirement, irrespective of the performance of the underlying investment. On the contrary, in case of defined-

contribution plan, the investor makes predefined contribution, but the benefit is market-driven or underlying investment‘s performance driven.

(a) National Pension Scheme (NPS)

Government of India has constantly been searching for a solution to the problem of providing adequate retirement income and in the effort of doing so, NPS has been designed. Government had a huge responsibility of single-handedly contributing towards the pension fund for its employees till 2003. The huge pension obligations for the government prompted a rethink of this scheme. Thus, the shift was being made from defined benefit system to defined contribution system by introducing NPS. Government of India, Ministry of Finance, Department of Economic Affairs Notification, and dated 22nd December 2003 has notified NPS. The NPS came into operation with effect from 1st January 2004 and was made applicable to all new employees to Central Government service, except to Armed Forces, joining Government service on or after 1st January 2004. The State Governments and Union Territories have also notified the NPS for their new employees. During 2004 to 2009, NPS was open only to Government employees and from 1st April, 2009 it was made available to every citizen of India between the age group of 18 and 55 on a voluntary basis. The New Pension System has been designed to enable the subscribers to make optimum decisions regarding their future and provide for their old-age through systemic savings from the day they start their employment. Under the scheme of NPS, the government employees are required to make a contribution at par with the employer i.e. 10 per cent of basic pay plus DA to the pension fund. Another major change that took place in 2008 was to allow the private pension fund managers to manage the NPS.

(b) Private Pension Funds

Apart from NPS, there are several private pension funds offering pension income to the retired personnel. The private pension schemes provided by insurance companies are gaining importance with an improvement in cost and quality of the living of the people. These private pension schemes offer competitive benefits, returns and better services. People consider this option to be a part of this investment needs wherein it allows them to participate and purchase units. The investors are mostly benefitted through tax exemptions that are possible through these plans. It is an avenue to plan the retirement and lead a secured life.

10. Mutual Funds

Mutual Fund refers to the trust that pools the savings of investors and forms a common fund. The fund thus created is then invested in financial market instruments like shares, debentures and other securities which also include government securities. The income earned through these investments and the capital appreciation realized are shared among the unit holders in proportion of the units held by them. Investments in securities are spread over a wide cross-section of industries and sectors, thus allowing risk reduction to take place. Diversification reduces the risk because all stocks and instruments may not move in the same direction and in the same proportion and at the same time.

(a) Open ended scheme

When a fund is accepted and liquidated on a continuous basis by a mutual fund manager, it is called ‘open ended scheme’. These schemes do not have a fixed maturity and entry to fund is always open to investors who can subscribe it at any time. Similarly, the investors have an option to get their holdings

redeemed at any time. Under this scheme the capitalization of the fund will constantly change, since it is always open for the investors to sell or buy the units. The scheme provides an excellent liquidity facility to investors. The value of the unit is based upon the net asset value of the unit.

(b) Close ended scheme

A close ended scheme means any scheme of mutual fund in which the period of maturity of the scheme is specified. Unlike open ended funds, the corpus of the close ended scheme is fixed and an investor can subscribe directly to the scheme only at the time of initial issue. After the initial issue is closed, a person can buy or sell the units of the scheme in the secondary market i.e. the stock exchanges where they are listed. The price in the secondary market is determined on the basis of demand and supply and hence could be different from the net asset value.

(c) Interval schemes

It is a kind of close ended scheme with a peculiar feature that it remains open during a particular part of a year for the benefit of the investors, either to offload their holdings or to undertake purchase of units at their NAV. An interval scheme is a scheme of mutual fund which is kept open for a specific interval and after that it operates as a closed scheme. Thus, it combines the features of both open ended as well as close ended schemes. Interval schemes have been permitted by the SEBI in recent years only. The scheme is open for sale or repurchase at a fixed pre-determined intervals which are disclosed in the offer document. The units of this scheme are also traded in the stock exchanges.

(d) Income Fund Scheme

The scheme that is tailored to suit the needs of investors who are particular about regular returns is known as income fund scheme. The scheme offers maximum current income, whereby the income earned by the units is distributed periodically. Such funds are offered in two forms. The first scheme earns a target constant income at a relatively low risk. While the second scheme offers the maximum possible income. This obviously implies that the higher expected returns come with the higher potential risks of the investment.

(e) Growth Fund Scheme

It is a mutual fund scheme that offers the advantage of capital appreciation of the underlying investment. For such funds investment is made in growth oriented securities that are capable of appreciating in the long run. In proportion to such capital appreciation the amount of risk to be assumed would be far greater.

(f) Conservative Fund Scheme

A scheme that aims at providing a reasonable rate of return, protecting the value of the investment and achieving capital appreciation may be designated as conservative fund scheme. These are also known as middle of the road funds, since such funds offer a blend of all these features. Further such funds divide their portfolio in common stocks and bonds in such a way as to achieve the desired objectives.

(g) Equity Fund Scheme

A kind of mutual whose strength is derived from equity-based investment is called ‘equity fund scheme’. They carry a very high degree of risk. Such funds do well in periods of

favourable capital market trends. A variation of the equity fund scheme is the 'index fund scheme', which is involved in transacting only on those Scrips which are included in any specific index.

(h) Bond Scheme Fund

It is a type of mutual fund whose strength is derived from bond based investments. The portfolio of such funds comprises bonds, debentures, etc. This type of fund carries advantage of secure and steady income. However, such shares have very little or no capital appreciation, but carry low risk. A variant of this scheme is 'Liquid funds', which specializes in investing in short term money market instruments. The focus is mainly on low risk and low, but steady income.

(i) Balanced Fund Scheme

A scheme of mutual fund that has a mix of debt and equity in the portfolio of investments of may be referred to as a 'balanced fund scheme'. The portfolio of such scheme will be often shifted between debt and equity, depending upon the prevailing market trends.

(j) Sectoral Fund Schemes

When the managers of the mutual funds invest the amount collected from a wide variety of small investors directly in various specific sectors of the economy, such funds are called as Sectoral Mutual Funds. The specialized sectors may include gold and silver, real estate, specific industry, etc.

(k) Fund of Fund Schemes

There can be Fund of Funds, where funds of one mutual fund are invested in the units of the other mutual funds. There are a number of other mutual funds that direct investment into a

specified sector of the economy. This makes diversified and yet intensive investment of funds possible.

(l) Leverage Funds Schemes

The funds that are created out of investments, with not only the amount mobilized from small savers but also the fund managers who borrow money from the capital market, are known as 'leveraged-fund scheme'. This way, fund managers pass on the benefit of leverage to the mutual fund investors. In order to operate such schemes, there must be provisions available.

(m)Gilt Funds

These funds seek to generate returns through investment in gilts. Under this scheme, funds are invested only in Central and State Government securities and repos/reverse repos. A portion of the corpus may be invested in the call money market or RBI to meet liquidity requirements. Government securities carry zero credit risk or default risks. Their prices are influenced only by movement of interest rates in the financial system.

(n) Index Funds

These funds are also known as growth funds, but they are linked to a specific index of share prices. It means that the funds mobilized under such scheme are invested principally in the securities of companies whose securities are included in the index concerned and in the same weightage. Thus, the funds progress is linked to the growth in the concerned index.

(o) Tax Savings Scheme

Certain mutual fund schemes offer tax benefits on investment made in mutual funds. This helps the Assessee to save tax. He can plan his investment in such a way that the tax payment is minimized, but within the legal framework.

(p) Money Market Mutual Funds

Money Market Mutual Fund refers to a scheme of mutual fund which has been set up with the objective of investing exclusively in money market instruments. These instruments include treasury bills, call and notice money, commercial papers, commercial bills, certificate of deposits, etc.

Module II

Investment Analysis

Investment analysis is defined as the process of evaluating an investment for profitability and risk. It ultimately has the purpose of measuring how the given investment is a good fit for a portfolio. Furthermore, it can range from a single bond in a personal portfolio, to the investment of a startup business, and even large scale corporate projects. Investment Analysis is the method adopted by analysts to evaluate that the investment opportunities, profitability and its associated risks in their portfolio. It helps them to determine whether the investment is worth or not.

Types of Investment Analysis

(1) **Bottom-Up:** The bottom-up analysis focuses on an individual company in which the investment is to be made. This helps the small investors to focus and plan their investment in a particular selected company rather than studying the entire market for investment purposes. It is a conservative approach but on the other hand, helps the investors in taking the right decision.

(2) **Top-Down:** Top-Down analysis, investors are required to study the entire market. Generally, big investors are interested in this type of strategy. The focus is entirely on the big markets ad, not in the small companies. It is a

comparatively broader approach than any other investment analysis.

(3) Fundamental: It is a traditional method in which analysis is done by finding out the Fair market value of the investment, and by that, the investor decides whether to buy the stock of the company of not. It is yet another excellent and effective method of analysing investments.

(4) Technical: This method is used to determine and identify the trading opportunities by observing the statistics of the stock market. The experts give guidance about when and where to invest in increasing the returns.

Advantages of Investment Analysis

- The investment analysis is a tool that helps investors to make wise decisions about their hard-earned money.
- This makes investors more alert about market trends and investment plans. One can get a considerable amount of benefits by deriving a proper plan from an expert or by himself.
- While doing analysis, the experts can easily research the securities and can also evaluate the sustainability and the growth of it in the near future. Through this study, the investors can have a clear idea of the securities he wishes to invest in.
- Not only individuals but investment analysis can help big companies arrange their portfolio management.

Disadvantages

- It requires investment plans, and they are somewhat complicated; also, it needs a whole lot of financial knowledge. Some small investors or medium investors cannot do justice with the same, and hence they may end up making the wrong decisions and also may incur huge losses in place of gains.

- It requires knowledge, and sometimes risk-aware investors appoint experts for the same. The experts give them proper guidance but the expert charges fees for the same. This can become an additional cost for many small and medium investors.

- When an individual is trying to have financial planning, he should determine the market risk, which is not predictable. No one in this world, not even the finance mister can predict the exact amount of risk that can be involved in any transaction. Therefore, there are unavoidable risk factors associated with investment analysis.

- Government policy can be a hamper in this investment analysis if this factor is not taken into account.

Risk and Return Analysis:

Risk

Risk can be defined as the probability that the expected return from the security will not materialize. Every investment involves uncertainties that make future investment returns risk-prone. Uncertainties could be due to the political, economic and industry factors.

Risk could be systematic in future depending upon its source. Systematic risk is for the market as a whole, while unsystematic risk is specific to an industry or the company individually. The first three risk factors discussed below are systematic in nature and the rest are unsystematic. Political risk could be categorised depending on whether it affects the market as whole, or just a particular industry.

Systematic versus Non-systematic Risk

Modern investment analysis categorizes the traditional sources of risk causing variability in returns into two general types: those that are pervasive in nature, such as market risk or interest rate risk, and those that are specific to a particular security issue, such as business or financial risk. Therefore, we must consider these two categories of total risk. Dividing total risk into its two components, a general (market) component and a specific (issuer) component, we have systematic risk and non-systematic risk, which are additive:

Total risk = General risk + Specific risk

= Market risk + Issuer risk

= Systematic risk + Non-systematic risk

Systematic Risk:

An investor can construct a diversified portfolio and eliminate part of the total risk, the diversifiable or non-market part. What is left is the non-diversifiable portion or the market risk. Variability in a security's total returns that is directly associated with overall movements in the general market or economy is called systematic (market) risk. Virtually all securities have some systematic risk, whether bonds or stocks, because systematic risk directly

encompasses interest rate, market, and inflation risks. The investor cannot escape this part of the risk because no matter how well he or she diversifies, the risk of the overall market cannot be avoided.

Non-systematic Risk:

The variability in a security's total returns not related to overall market variability is called the non- systematic (non-market) risk. This risk is unique to a particular security and is associated with such factors as business and financial risk as well as liquidity risk. Although all securities tend to have some non-systematic risk, it is generally connected with common stocks.

Remember the Difference:

Systematic (market) risk is attributable to broad macro factors affecting all securities. Non-systematic (non-market) risk is attributable to factors unique to a security. Different types systematic and unsystematic risk are explained as under:

1) **Market Risk:** The variability in a security's returns resulting from fluctuations in the aggregate market is known as market risk. All securities are exposed to market risk including recessions, wars, structural changes in the economy, tax law changes and even changes in consumer preferences. Market risk is sometimes used synonymously with systematic risk.

2) **Interest Rate Risk:** The variability in a security's return resulting from changes in the level of interest rates is referred to as interest rate risk. Such changes generally affect securities inversely; that is, other things being equal, security prices move inversely to interest rates. The reason for this movement is tied up with the valuation of securities. Interest rate risk affects bonds more directly than common stocks and

is a major risk that all bondholders face. As interest rates change, bond prices change in the opposite direction.

3) **Purchasing Power Risk:** A factor affecting all securities is purchasing power risk, also known as inflation risk. This is the possibility that the purchasing power of invested dollars will decline. With uncertain inflation, the real (inflation-adjusted) return involves risk even if the nominal return is safe (e.g., a Treasury bond). This risk is related to interest rate risk, since interest rates generally rise as inflation increases, because lenders demand additional inflation premiums to compensate for the loss of purchasing power.

4) **Regulation Risk:** Some investments can be relatively attractive to other investments because of certain regulations or tax laws that give them an advantage of some kind. Municipal bonds, for example, pay interest that is exempt from local, state and federal taxation. As a result of that special tax exemption, municipals can price bonds to yield a lower interest rate since the net after-tax yield may still make them attractive to investors. The risk of a regulatory change that could adversely affect the stature of an investment is a real danger. To make matters worse, there was no extensive secondary market for these illiquid securities and many investors found themselves unable to sell those securities at anything but 'fire-sale' prices if at all.

5) **Business Risk:** The risk of doing business in a particular industry or environment is called business risk. For example, as one of the largest steel producers, U.S. Steel faces unique problems. Similarly, General Motors faces unique problems as a result of such developments as the global oil situation and Japanese imports.

6) **Reinvestment Risk:** The Yield To Maturity (YTM) calculation assumes that the investor reinvests all coupons received from a bond at a rate equal to the computed YTM on that bond, thereby earning interest on interest over the life of the bond at the computed YTM rate. In effect, this calculation assumes that the reinvestment rate is the yield to maturity. Its exact impact is a function of coupon and time to maturity, with reinvestment becoming more important as either coupon or time to maturity, or both, rise. Specifically:

   (a) Holding everything else constant, the longer the maturity of a bond, the greater the reinvestment risks.

   (b) Holding everything else constant, the higher the coupon rate, the greater the dependence of the total dollar returns from the bond on the reinvestment of the coupon payments.

7) **Bull-Bear Market Risk:** This risk arises from the variability in the market returns resulting from alternating bull and bear market forces. When security index rises fairly consistently from a low point, called a trough, over a period of time, this upward trend is called a bull market. The bull market ends when the market index reaches a peak and starts a downward trend. The period during which the market declines to the next trough is called a bear market.

8) **Management Risk:** Management, all said and done, is made up of people who are mortal, fallible and capable of making a mistake or a poor decision. Errors made by the management can harm those who invested in their firms. Forecasting errors is difficult work and may not be worth the effort and, as a result, imparts a needlessly sceptical outlook. An agent-principal relationship exists when the shareholder owners

delegate the day-today decision-making authority to managers who are hired employees rather than substantial owners. This theory suggests that owners will work harder to maximize the value of the company than employees will. Various researches in the field indicate that investors can reduce their losses to difficult-to-analyse management errors by buying shares in those corporations in which the executives have significant equity investments.

9) **Default Risk:** It is that portion of an investment's total risk that results from changes in the financial integrity of the investment. For example, when a company that issues securities moves either further away from bankruptcy or closer to it, these changes in the firm's financial integrity will be reflected in the market price of its securities. The variability of return that investors experience, as a result of changes in the credit worthiness of a firm in which they invested, is their default risk. Almost all the losses suffered by investors as a result of default risk are not the result of actual defaults and/or bankruptcies. Investor losses from default risk usually result from security prices falling as the financial integrity of a corporation's weakness - market prices of the troubled firm's securities will already have declined to near zero.

10) **International Risk:** International risk can include both country risk and exchange rate risk. Exchange Rate Risk: All investors who invest internationally in today's increasingly global investment arena face the prospect of uncertainty in the returns after they convert the foreign gains back to their own currency. Unlike the past, when most US investors ignored international investing alternatives, investors today must recognize and understand exchange rate risk, which can be defined as the variability in returns on securities caused

by currency fluctuations. Exchange rate risk is sometimes called currency risk.

(a) Country Risk: Country risk, also referred to as political risk, is an important risk for investors today. With more investors investing internationally, both directly and indirectly, the political, and therefore economic stability and viability of a country's economy need to be considered.

(b) Liquidity Risk: Liquidity risk is the risk associated with the particular secondary market in which a security trades. An investment that can be bought or sold quickly and without significant price concession is considered liquid. The more uncertainty about the time element and the price concession, the greater the liquidity risk. A Treasury bill has little or no liquidity risk, whereas a small OTC stock may have substantial liquidity risk.

(c) Liquid Assets Risk: It is that portion of an asset's total variability of return which results from price discounts given or sales concessions paid in order to sell the asset without delay. Perfectly liquid assets are highly marketable and suffer no liquidation costs. Illiquid assets are not readily marketable and suffer no liquidation costs. Either price discounts must be given or sales commissions must be paid, or the seller must incur both the costs, in order to find a new investor for an illiquid asset. The more illiquid the asset is, the larger the price discounts or the commissions that must be paid to dispose of the assets.

(d) Political Risk: It arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the efforts of various groups to improve their relative positions increasing the variability of return from the affected assets. Regardless of whether the changes that cause political risk are sought by political or by economic interests, the resulting variability of return is called political risk, if it is accomplished through legislative, judicial or administrative branches of the government.

Measurement of Risk

(1) Volatility

Of all the ways to describe risk, the simplest and possibly most accurate is "the uncertainty of a future outcome." The anticipated return for some future period is known as the expected return. The actual return over some past period is known as the realized return. The simple fact that dominates investing is that the realized return on an asset with any risk attached to it may be different from what was expected. Volatility may be described as the range of movement (or price fluctuation) from the expected level of return. For example, the more a stock goes up and down in price, the more volatile that stock is. Because wide price swings create more uncertainty of an eventual outcome, increased volatility can be equated with increased risk. Being able to measure and determine the past volatility of a security is important in that it provides some insight into the riskiness of that security as an investment.

(2) Standard Deviation

Investors and analysts should be at least somewhat familiar with the study of probability distributions. Since the return an investor will earn from investing is not known, it must be estimated. An investor may expect the TR (total return) on a particular security to be 10% for the coming year, but in truth this is only a "point estimate."

(3) Probability Distributions

Probability distributions can be either discrete or continuous. With a discrete probability distribution, a probability is assigned to each possible outcome. With a continuous probability distribution, an infinite number of possible outcomes exists. The most familiar continuous distribution is the normal distribution depicted by the well-known bell-shaped curve often used in statistics. It is a two-parameter distribution in that the mean and the variance fully describe it. To describe the single-most likely outcome from a particular probability distribution, it is necessary to calculate its expected value. The expected value is the average of all possible return outcomes, where each outcome is weighted by its respective probability of occurrence.

To calculate the total risk associated with the expected return, the variance or standard deviation is used. This is a measure of the spread or dispersion in the probability distribution; that is, a measurement of the dispersion of a random variable around its mean. Without going into further details, just be aware that the larger this dispersion, the larger the variance or standard deviation. Since variance, volatility and risk can, in this context, be used synonymously, remember that the larger the standard deviation, the more uncertain the

outcome. The prices of securities are based on investors' expectations about the future. The relevant standard deviation in this situation is the ex ante standard deviation and not the ex post based on realized returns. Fortunately, the number one rule of portfolio management is to diversify and hold a portfolio of securities, and the standard deviations of well-diversified portfolios may be more stable. Something very important to remember about standard deviation is that it is a measure of the total risk of an asset or a portfolio, including, therefore, both systematic and unsystematic risk. It captures the total variability in the asset's or portfolio's return, whatever the sources of that variability.

Coefficient of Variance:

The coefficient of variance shows the risk per unit of return and it provides a more meaningful basis for comparison when the expected return on two securities is not the same. To find coefficient of variance, standard deviation of return is divided by the expected mean return.

(4) Beta

Beta is a measure of the systematic risk of a security that cannot be avoided through diversification. Beta is a relative measure of risk-the risk of an individual stock relative to the market portfolio of all stocks. If the security's returns move more (less) than the market's returns as the latter changes, the security's returns have more (less) volatility (fluctuations in price) than those of the market. It is important to note that beta measures a security's volatility, or fluctuations in price, relative to a benchmark, the market portfolio of all stocks.

Beta is useful for comparing the relative systematic risk of different stocks and, in practice, is used by investors to judge

a stock's riskiness. Stocks can be ranked by their betas. Because the variance of the market is constant across all securities for a particular period, ranking stocks by beta is the same as ranking them by their absolute systematic risk. Stocks with high betas are said to be high-risk securities.

Risk and Expected Return

Risk and expected return are the two key determinants of an investment decision. Risk, in simple terms, is associated with the variability of the rates of return from an investment; how much do individual outcomes deviate from the expected value? Statistically, risk is measured by any one of the measures of dispersion such as co-efficient of range, variance, standard deviation etc.

The risk involved in investment depends on various factors such as:

1) The length of the maturity period – longer maturity periods impart greater risk to investments.

2) The credit-worthiness of the issuer of securities – the ability of the borrower to make periodical interest payments and pay back the principal amount will impart safety to the investment and this reduces risk.

3) The nature of the instrument or security also determines the risk. Generally, government securities and fixed deposits with banks tend to be riskless or least risky; corporate debt instruments like debentures tend to be riskier than government bonds and ownership instruments like equity shares tend to be the riskiest. The relative ranking of instruments by risk is once again connected to the safety of the investment.

4) Equity shares are considered to be the most risky investment on account of the variability of the rates of returns and also because the residual risk of bankruptcy has to be borne by the equity holders.

5) The liquidity of an investment also determines the risk involved in that investment. Liquidity of an asset refers to its quick saleability without a loss or with a minimum of loss.

6) In addition to the aforesaid factors, there are also various others such as the economic, industry and firm specific factors that affect the risk an investment.

Another major factor determining the investment decision is the rate of return expected by the investor. The rate of return expected by the investor consists of the yield and capital appreciation.

Returns

The main objective of an investment is appreciation in the value of money invested either in the form of interest/dividend or capital gain. Return is the profit/benefit associated with investment. We invest money so that we get return on it. Measuring return assumes a strategic importance in investment analysis as the investment is undertaken to get returns.

Total Return: Yield/income and profit due to price changes/capital gain are the components of total return from a security or portfolio.

TR = (Any income received in the form of interest/dividend/rent + difference between selling and buying of security) × 100 ÷ Buying Price of asset.

Types of Return

(1) Ex-post return: If the return is computed for a security for the past period it is called ex-post return.

(2) Ex-ante return: If the return is being computed for a security for the future period it is called ex-ante return. When an investor wants to know what return he can get on his investment in the next period he has to assign probabilities to the return. Ex-ante return is also called expected return because it is the return the investor expects to receive.

(3) Nominal rate of return: It's the rate of return on an investment before considering tax & inflation rate.

(4) Real return of return: It's the return an investor receives after the rate of inflation is taken into account.

(5) Effective rate of return: It's the rate of interest on an investment annually when compounding occurs more than once.

(6) Portfolio return: The weighted average of the returns of individual securities included in the portfolio, (weights are the proportion of amounts invested in each security) is called portfolio return.

Determinants of the Rate of Return

Therefore, three major determinants of the rate of return expected by the investor are:

1. The time preference risk-free real rate
2. The expected rate of inflation

3. The risk associated with the investment, which is unique to the investment.

Hence,

Required return = Risk-free real rate + Inflation premium + Risk premium

It was stated earlier that the rate of return from an investment consists of the yield and capital appreciation, if any. The difference between the sale price and the purchase price is the capital appreciation and the interest or dividend divided by the purchase price is the yield.

Example:

The following information is given for a corporate bond. Price of the bond at the beginning of the year: 90, Price of the bond at the end of the year: 95.40, Interest received for the year: 13.50. Compute the rate of return.

Solution: The rate of return can be computed as follows:

$$\text{Rate of Return (Rt)} = \frac{It+(Pt-Pt-1)}{Pt-1}$$

$$= \frac{13.5+(95.40-90)}{90}$$

= 0.21 or 21% per annum

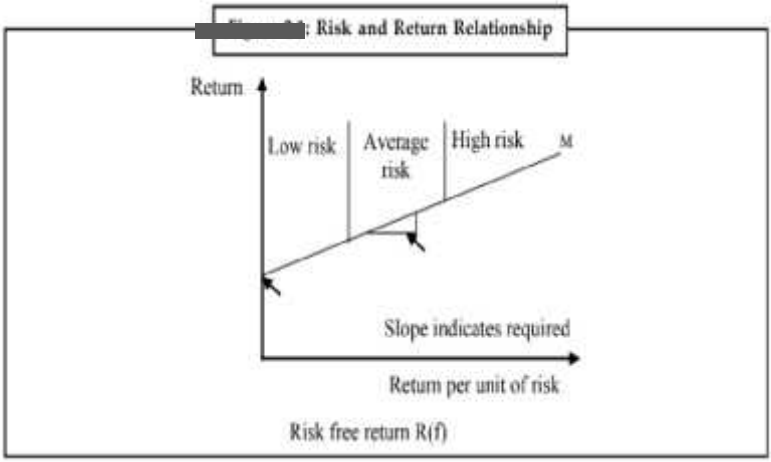
The return of 21% consists of 15% current yield and 6% capital gain yield.

Risk-Return Relationship

The most fundamental tenet of finance literature is that there is a trade-off between risk and return. The risk-return relationship requires that the return on a security should be commensurate with its riskiness. If the capital markets are operationally efficient, then all investment assets should provide a rate or return that is consistent with the risks associated with them. The risk and return are directly variable, i.e., an investment with higher risk should produce higher return.

The risk/return trade-off could easily be called the "ability-to-sleep-at-night test." While some people can handle the equivalent of financial skydiving without batting an eye, others are terrified to climb the financial ladder without a secure harness. Deciding what amount of risk you can take while remaining comfortable with your investments is very important.

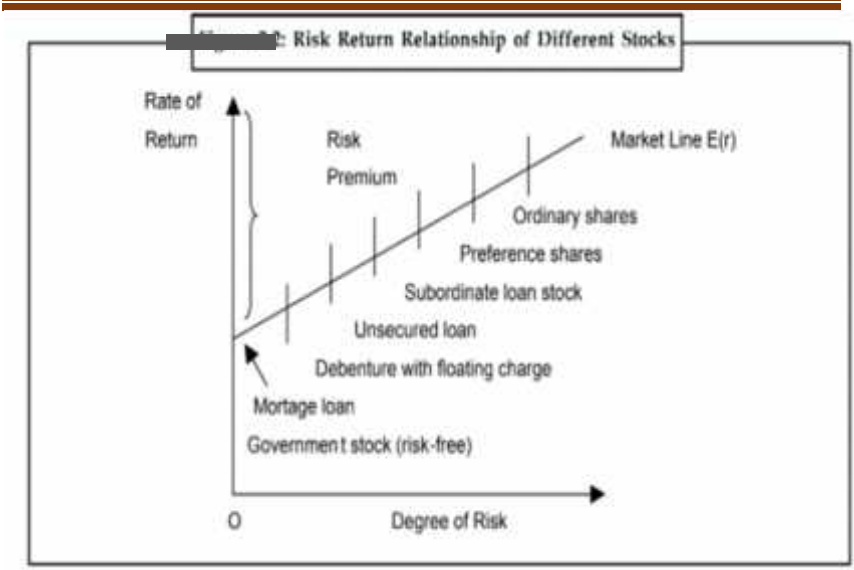
In the investing world, the dictionary definition of risk is the possibility that an investment's actual return will be different than expected. Technically, this is measured in statistics by standard deviation. Risk means you have the possibility of losing some, or even all, of your original investment.



Low levels of uncertainty (low risk) are associated with low potential returns. High levels of uncertainty (high risk) are associated with high potential returns. The risk/return trade-off is the balance between the desire for the lowest possible risk and the highest possible return. This is demonstrated graphically in the chart below. A higher standard deviation means a higher risk and higher possible return. The figure below represents the relationship between risk and return.

The slope of the Market Line indicates the return per unit of risk required by all investors. Highly risk-averse investors would have a steeper line, and vice versa. Yields on apparently similar stocks may differ. Differences in price, and therefore yield, reflect the market's assessment of the issuing company's standing and of the risk elements in the particular stocks. A high yield in relation to the market in general shows an above average risk element.

This is shown in the figure below:



Given the composite market line prevailing at a point of time, investors would select investments that are consistent with their risk preferences. Some will consider low-risk investments, while others prefer high-risk investments.

A common misconception is that higher risk equals greater return. The risk/return trade-off tells us that the higher risk gives us the possibility of higher returns. But there are no guarantees. Just as risk means higher potential returns, it also means higher potential losses. On the lower end of the scale, the risk-free rate of return is represented by the return on Treasury Bills of government securities, because their chance of default is next to nil. If the risk-free rate is currently 8 to 10 %, this means, with virtually no risk, we can earn 8 to 10 % per year on our money.

Portfolio Diversification and Risk

In an efficient capital market, the important principle to consider is that, investors should not hold all their eggs in one basket; investor should hold a well-diversified portfolio.

- In order to understand portfolio diversification, one must understand correlation. Correlation is a statistical measure that indicates the relationship, if any, between series of numbers representing anything from cash flows to test data. If the two series move together, they are positively correlated; if the series move in opposite directions, they are negatively correlated. The existence of perfectly correlated especially negatively correlated-projects is quite rare.

- In order to diversify project risk and thereby reduce the firm's overall risk, the projects that are best combined or added to the existing portfolio of projects are those that have a negative (or low positive) correlation with existing projects. By combining negatively correlated projects, the overall variability of returns or risk can be reduced.

Module III

Approaches to Investment Valuation

Introduction

Security analysis comprises of an examination and evaluation of the various factors affecting the value of a security. Security analysis is about valuing the assets, debt, warrants, and equity of companies from the perspective of outside investors using publicly available information. The security analyst must have a thorough understanding of financing statements, which are an important source of this information. As such, the ability to value equity securities requires cross-disciplinary knowledge in both finance and financial accounting.

Equity Value and Enterprise Value

The equity value of a firm is simply its market capitalization, that is, market price per share multiplied by the number of outstanding shares. The enterprise value, also referred to as the firm value, is the equity value plus the net liabilities. The enterprise value is the value of the productive assets of the firm, not just its equity value, based on the accounting identity.

Assets = Net liabilities + Equity

Note that net values of the assets and liabilities are used. Any cash and cast-equivalents would be used to offset the liabilities and therefore are not included in the enterprise value.

Approaches to Investment Valuation

Two types of approaches to valuation are discounted cash flow methods and financial ratio methods. Two discounted cash flow approaches to valuation are:

1. **Value the flow to equity**, and
2. **Value the cash flow to the enterprise.**

The **"cash flow to equity"** approach to valuation directly discounts the firm's cash flow to the equity owners. This cash flow takes the form of dividends or share buybacks. While intuitively straightforward, this technique suffers from numerous drawbacks.

(a) It is not very useful in identifying areas of value creation.

(b) Changes in the dividend payout ratio result in a change in the calculated value of the company even though the operating performance might not change.

This effect must be compensated by adjusting the discount rate to be consistent with the new payout ratio. Despite its drawbacks, the equity approach often is more appropriate when valuing financial institutions because it treats the firm's liabilities as a part of operations.

The **"cash flow to the enterprise"** approach value the equity of the firm as the value of the operations less the value of the debt. The value of the operations is the present value of the future free cash flows expected to be generated. The free cash flow is calculated by taking the operating earnings (earnings excluding interest expenses), subtracting items that required cash but that did not reduce reported earnings, and adding non-cash items that

did reduce reported earnings but that did not result in cash expenditures. Interest and dividend payments are not subtracted since we are calculating the free cash flow available to all capital providers, both equity and debt, before financing. The result is the cash generated by operations. The free cash flow basically is the cash that would be available to shareholders if the firm had no debt-the cash produced by the business regardless of the way it is financed. The expected determine the enterprise value. The value of the equity then is the enterprise value less the value of the debt.

Fundamental Analysis

Security analysis is the basis for rational investment decisions. If a security's estimated value is above its market price, the security analyst will recommend buying the stock. If the estimated value is below the market price, the security should be sold before its price drops. However, the values of the securities are continuously changing as news about the securities becomes known. The search for the security pricing involves the use of fundamental analysis. Under fundamental analysis, the security analysts studies the fundamental facts affecting a stock's values, such as company's earnings, their management, the economic outlook, the firm's competition, market conditions etc.

Fundamental analysis is primarily concerned with determining the intrinsic value or the true value of a security. For determining the security's intrinsic value the details of all major factors (GNP, industry sales, firm sales and expense etc.,) is collected or an estimates of earnings per share may be multiplied by a justified or normal prices earnings ratio. After making this determination, the intrinsic value is compared with the security's current market price. If the market price is substantially greater than the intrinsic value the security is said to be overpriced. If the market price is

substantially less than the intrinsic value, the security is said to be under-priced.

Importance of Fundamental Analysis

Fundamental analysis includes all the qualitative, quantitative, macroeconomic, micro-economic, and other financial and non-financial data in determining the fair value of the company. This fair value is then used to identify whether the company is overvalued or undervalued. The importance of fundamental analysis are as follows:

(1) **Management Evaluation:** Management is like the soul of the company. It plays a very crucial role in the growth and success of a company. Fundamental analysis helps in understanding the structure of the management and how it has been performing over the years.

(2) **Analyzing company's strength:** No matter how good or bad the management or other factors are, at the end of the day financial performance is what matters the most. Fundamental analysis is not a very easy task. People find it difficult to do a stock research. Fundamental analysis is basically "thinking out of the box" with no predetermined parameters.

(3) **Determining company's ability to beat the competitors:** Even if company's financial performance is good, what more is to be seen is that whether the company is able to beat its competitors. If it is not able to outperform its peers, it will not be able to survive in the long run. This peer comparison can be done with the help of fundamental analysis.

(4) Determining fair value: With the help of fundamental analysis, one can easily determine the fair value of a company by carefully analyzing the past and present performance of the company. Fair value helps in deciding whether the company is overvalued or undervalued. On the basis of this analysis, one can take decision on what action to take. Hence, fundamental analysis is important in stock picking.

(5) Predicting future price movement: Even before an investor looks at a company's financial statements or does any research, one of the most important questions that should be asked is: 'What exactly does the company do?' This is referred to as a company's business model – It's how a company makes money.

Fundamental analysis scans the industry and the overall economy, hence forecasts the movement of the price of the security. Based on certain parameters, fundamental analyst tries to predict the future price.

Rationale of Fundamental Analysis

Fundamental analysis is really a logical and systematic approach to estimating the future dividends and share price. It is based on the basic premise that share price is determined by a number of fundamental factors relating to the economy, industry and company. Hence, the economy fundamentals, industry fundamentals and company fundamentals have to be considered while analyzing a security for investment purpose. Fundamental analysis is, in other words, a detailed analysis for the fundamental factors affecting the performance of the companies.

(1) To conduct a company 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.

(5) To find the intrinsic value of the property.

EIC (Economy, Industry, Company) Framework

In this approach, investor attempts to look at fundamental factors that affect risk – returns of the securities. The objective of fundamental security analysis is to appraise the intrinsic value of a security. The intrinsic value is the through economic worth of a financial asset. Security analysis involves examination of the underlying forces that affect the wellbeing of the economy, Industry and Company. The security analysis is also called as EIC Analysis. (Economy, Industry, Company).

(1) Economic Analysis

(2) Industry Analysis

(3) Company Analysis

(1) 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 an 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 behaviour 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.

1.1 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:

(a) 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 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 favourable it is for stock market.

(b) 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 favourably 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, favourable impact it have on stock prices.

(c) 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 favourable it is for the stock market.

(d) 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 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.

(e) 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.

(f) 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 still higher. With the deregulation interest rates 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 favourable 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.

(g) 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 favourable to the stock market.

(h) 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 favourable impact on stock market.

(i) 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 favourable 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, favourable balance of payment renders favourable impact on stock market.

(j) 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 or 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 favourable.

(k) 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.

(l) 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.

1.2 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:

(a) 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.

(b) 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:

i) 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 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.

ii) **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.

iii) **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.

(c) 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 of 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.

(d) 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.

(e) 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 he 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.

(f) 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.

(2) 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:

2.1 Industry Life Cycle Analysis

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

(a) 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.

(b) 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.

(c) 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.

(d) 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.

2.2 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:

(a) 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 mainly 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.

(b) 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 good market in the boom period and demand for them slackens during the recession.

(c) 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.

(d) 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.

2.3 Characteristics of an Industry Analysis

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

(a) 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 behaviour, 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.

(b) 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.

(c) 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.

(d) 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.

(e) 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.

(f) 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.

(g) 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.

(h) 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.

(i) 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.

(j) 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.

(k) 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.

2.4 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:

(a) 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 variability in the dependent variables, the multiple regression analysis is used.

(b) 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.

(c) 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 with in an industry becomes more aggressive because foreign firms begin to compete, economically depressed periods occur or other factors cause growth rate to drop.

(3) Company Analysis

In the company analysis the investment analyst collect all the information related to the company and evaluates the present and future value of the stock. In this analysis, all the factors affecting the earnings of a particular company are considered. The risk and return associated with the purchase of a stock is analyzed to take a better investment decisions. The valuation process depends upon the investor ability to elicit information from the relationship and inter-relationship among the company related variables.

Up-to-date information is required on the status and trends in the economy, particular industries and firms. Success in investing will be largely dependent on:

- Discovering new and credible information rapidly and in more details then others do. This depends upon the analyst ability to develop a system that couples original thoughts and unique ways of forming expectations about the

prospects for individual company. For this purpose various public and private sources of information are analyzed.

- Applying superior judgement so as to ascertain the relevance of information to the decision at hand. Judgement depends upon one's knowledge and experiences. By applying various tools of analysis to the data, the investor formulates expectations and judgement about the alternatives available to him.

For company analysis, the internal and external information need to be studied. Internal information consists of data and events made public by firms concerning their operations. The principle information sources generated internally by a firm are its financial statements. External sources of information are those generated independently outside the company. They provide supplement to internal sources.

Factors Determining 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:

(1) The Quantitative and

(2) 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.

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:

(1) Competitive Edge: Many industries in India are composed of hundreds of individuals 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 obtain the leadership position; have proven his 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: Investor generally prefers 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 better position as growth in sales is followed by growth in profit. The growth in sales of the company is analysed 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 earning of the company should also be analysed 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 (ant 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. The questions that need to be answered for company analysis are:

(a) Availability and Cost of Inputs: Is the company well placed with respect to the availability of basic raw materials, power, fuel and other production inputs? What are the costs advantages/disadvantages of the company vis-à-vis its competitors?

(b) Order Position: What is the order position of the company? How many months or years of production does it represent? Is the order position improving or deteriorating?

(c) Regulatory Framework: What is the licensing policy applicable to the industry to which the firm belongs? Are there any price and/or distribution controls applicable to the company? If so, what are their implications for profitability?

(d) Technological and Production Capabilities: What is the technological competence of the firm? What is the state of its plant and machinery? Does the company have unutilized capacity to exploit favourable market developments?

(e) Marketing and Distribution: What is the image of the company in the marketplace? How strong is the loyalty of its customers/clients? What is the reach of the distribution network?

(f) Finance and Accounting: What are the internal accruals? How much access the companies have to external financing? What are the products in the portfolio of the company? How competitive is the position of the company in these products?

(g) Human Resource and Personnel: How competent and skilled is the workplace of the company? Is the company over-staffed or under-staffed? What is the extent of employee turnover and absenteeism? What is the level of employee motivation and morale?

All information relating to these factors may be available from the annual reports and from the published sources also. The first-hand information is also available from the official sources of the company.

Company Analysis: The Study of Financials 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: Liquidity rations means ability of the company to pay the short term debts in time. These ratios are calculated to analyze the short term financial position and short term financial solvency of firm. Commercial

banks and short term creditors are interested in such analysis. These ratios are:

i) **Current Ratio**

ii) **Acid Test Ratio**

(b) Turnover Ratios: These ratios show how well the assets are used and the extent of excess inventory. The different type of turnover ratios are as follows:

i) **Inventory turnover ratio**

ii) **Receivables turnover ratio**

iii) **Fixed assets turnover ratio**

iv) **Total assets turnover ratio**

(c) Profit Margin Ratios: Earning of more and more profit with the optimum use of available resources of business is called profitability. The investor is very particular in knowing net profit to sales, net profit to total assets and net profit to equity. The profitability ratio measures the overall efficiency and control of firm.

Forecasting Earnings

There is strong evidence that earnings have a direct and powerful effect upon dividends and share prices. So the importance of forecasting earnings cannot be overstated. These ratios are generally known as 'Return on Investment Ratios'. These ratio help in evaluating whether the business is earning adequate return on the capital invested or not. With the help of the following ratios the performance of the business can be measured. The earning forecasting ratios are:

(a) Return on Total Assets: Changes in reported earnings can result from changes in methods of accounting, changes in the operations of the business and/or in financing of business, that is, changes in productivity or in resource base. This ratio represents the overall efficiency of capital invested in business. This ratio can also be called as gross capital employed ratio. The total assets here are combination of fixed assets and current assets.

(b) Return on Equity: This ratio is calculated to evaluate the profitability of the business from the point of view of the ordinary shareholders.

(c) Earnings and Role of Financing: Borrowing of money at a fixed cost and the use of these funds to earn return on assets is known as employing leverage. If one can earn more on borrowed money than you have to pay for it, the leverage is to firm's advantage. However, leverage should be used within reasonable limits because excessive use of debt relative to equity increases borrowing costs and also the cost of equity funds. The volatility of shareholders returns increases with the expansion of the degree of financial leverage. The greater volatility of earnings owing to increased leverage can, at certain levels of debt financing, cause the market to pay less per rupee of earnings. Further with the use of more debts it may become progressively difficult to maintain (or improve) the rate of return on assets. One of the best ways of measuring the proportions of debt and equity financing is:

i) Debt to asset ratio

ii) Debt to equity ratio

iii) Long term debt to equity

(d) Valuation Ratios: Earnings and Dividend Level

i) **Book value per share:** This ratio indicates the share of equity shareholders after the company has paid all its liabilities, creditors, debenture holder and preference shareholders.

ii) **Earnings per share (EPS):** This ratio measures the earnings per share available to ordinary shareholders. Equity shareholders have the right to all profits left after payment of taxes and preference dividend. This ratio is calculated by dividing the profits available for equity shareholders by the number of equity shares issued. This ratio is quite significant. EPS affects the market value of shares. It is an indicator of the dividend paying capacity of the firm. By comparing the EPS with other firms, management can know whether ordinary share capital is being utilized effectively or not.

iii) **Dividend per Share (DPS):** All the profits after tax and preference dividend available for equity shareholders are not distributed among them as dividend. Rather, a part of it is related in business. The balance of profits is distributed among equity shareholders. To calculate dividend per share, the profits distributed as dividend among equity shareholders is divided by number of equity shares.

iv) **Dividend Payout Ratio (D/P ratio):** This ratio establishes the relationship between the earnings available for ordinary shareholders and the dividend paid to them. In other words, it explains what percentage of profit after tax and preference dividend has been paid to equity shareholders as dividend.

v) **Dividend and Earnings Yield:** These ratios are used to evaluate the profitability from the stand point of ordinary shareholders. Earning per share (EPS) and Dividend per Share (DPS) are calculated on the basis of book value of share but yield is always calculated on the basis of market value of shares.

vi) **Price to Earnings Ratio:** This ratio is calculated by dividing the market price of a share by earnings per share.

Sources of Investment Information

(1) International Affairs

With increasing globalization, international events affect the economy of the nation. Nations are economically and politically linked with each other. The economic crisis of one nation has a contagion effect on the other.

(2) National Affairs

The growth of the national economy and political events within the nation influence investment decisions. The political events are provided by the newspapers, magazines. The economic events and their implication on the securities markets are analysed in Financial Express, Economic Times and Business Line. RBI Bulletin and annual reports give a wide range of information regarding macro-economic indicators like GDP, GNP, inflation, agriculture and industrial production, capital market, development in the banking sectors and the balance of payment. Center for Monitoring Indian Economy also publishes reports about the macro economic factors. The Economic Survey of India and reports of companies also

provide information regarding the economy, industry and other sectors.

(3) Industry Information

Information about the industry is required to identify the industries that perform better than the national economy as a whole. Financial news papers regularly bring out industrial studies for the benefit of the investors.

(4) Company Information

A source of company information must be developed to facilitate the company analysis. The BSE, NSE and OTCEI provide details about the listed companies in the web sites. Almost all the financial journals carry out the company analysis and even suggest enter, exit and stay hints for the particular company stock.

(5) Stock Market Information

All the financial dailies and investment related magazines publish the stock market news. Separate News Bulletins are issued by BSE, NSE and OTCEI providing information regarding the changes that take place in the stock market. SEBI newsletter gives the changes in the rules and regulations regarding the activities of the stock market.

Module IV

Technical Analysis

Introduction

Prices of securities in the stock market fluctuate daily on account of continuous buying and selling. Stock prices move in trends and cycles and are never stable. An investor in the stock market is interested in buying securities at a low price and selling them at a high price so as to get a good return on his investment. He, therefore, tries to analyse the movement of share prices in the market. Two approaches are commonly used for this purpose. One of these is the fundamental analysis wherein the analyst tries to determine the true worth or intrinsic value of a share based on the current and future earning capacity of the company. He would buy the share when its market price is below its intrinsic value. The second approach to security analysis is called technical analysis. It is an alternative approach to the study of stock price behaviour.

Technical Analysis

The International Federation of Technical Analysts defines technical analysis as “the systematic method of analyzing financial instruments, including securities, futures and interest rate products, with only market-delivered information such as price, volume, volatility and open interest”.

Technical analysis involves a study of market generated historical data like prices and volumes to determine the future direction of price movement than to measure a financial assets intrinsic value.

Technical analysts' approach of investment is essentially a reflection of the view that the historical performance of a financial asset like stocks and markets are indications of future movement. The predictability of technical analysis is based up on the market-delivered information such as price, volatility, volume, trading pattern and open interest.

It involves the examination of past market data such as prices and the volume of trading, which leads to an estimate of future price trends and therefore an investment decision. The fundamental assumption is that using data from the market itself is a good idea because the market is its own best predictor.

Assumptions of Technical Analysis

Following are the four assumptions that support the basic approach of technical analysis:

- The market value of any good or service is determined solely by the interaction of supply and demand;
- Supply and demand are governed by numerous factors, both rational and irrational;
- Disregarding minor fluctuations, the prices for individual securities and the overall value of the market tend to move in trends, which persist for appreciable lengths of time; and
- Prevailing trends change in reaction to shifts in supply and demand relationships and these shifts can be detected in the action of the market

Advantages of Technical Analysis

The advantages of applying technical analysis to the markets are:

(1) It is applicable across all markets, instruments, and time frames, where price patterns, oscillators and overlay indicators are all treated in exactly the same manner. No new learning is required in order to trade new markets or time frames, unlike in fundamental analysis where the analyst must be conversant with the specifics of each stock or market.

(2) There is no need to study the fundamentals of the markets traded or analysed in order to apply technical analysis, since technical analysts believe that all information that impacts or potentially may impact the stock or market is already reflected in the price on the charts.

(3) Technical analysis provides a clear visual representation of the behaviour of the markets, unlike in fundamental analysis where most of the data is in numerical form.

(4) It provides timely and precise entry and exit price levels, preceded by technical signals indicating potential bullishness or bearishness. It also has the ability to pinpoint potential time of entry via time projection techniques not available to fundamentalists. Fundamental analysis does not provide the exact price or time of entry.

(5) It makes the gauging of market risk much easier to visualize. Volatility is more obvious on the charts than it is in numerical form.

(6) The concerted effort of market participants acting on significantly clear and obvious price triggers in the

markets helps create the reaction required for a more reliable trade. This is the consequence of the self-fulfilling prophecy.

Challenges of Technical Analysis

Despite the assertions of technical analysis, this analysis is not a sure-fire method. The various limitations of technical were pointed but by its critics as given under:

(1) Difficult in Interpretation: Technical analysis is not as simple as it appears to be. While the charts are fascinating to look at, interpreting them correctly is very difficult. It is always easy to interpret the charts long after the actual point of time. As such, fundamentals argue that charting techniques are no different from palmistry.

(2) Frequent Changes: With changes in market, chart patterns keep on changing. Accordingly, technical analysts change their opinions about a particular investment very frequently. One day they put up a buy signal. A couple of weeks later, they see a change pattern and put up a sell signal.

(3) Unreliable Changes: Changes in market behaviour observed and studied by technical analysts may not always be reliable owing to ignorance or intelligence or manipulative tendencies of some participants. A false piece of information or wrong judgement may result in trade at a lower than market price. If the technicians fail to wait for confirmation, they incur losses. With actively traded stocks, the prices may be the result of battle of wits and not the intrinsic value. In the game of making money, two knowledgeable persons may engage in buying and selling with the hope that everyone would make money at the expense of the others. In this game, many may lose, if they are not cleverer and luckier.

(4) Unpredictable Changes: Technicians expect changes to take place in a known and gradual fashion.

a) History does not repeat itself: One of the major limitations of technical analysis is that the entire data is based on the past. It is presumed that future resembles the past. There is no guarantee that history repeats itself. Systems become more sophisticated and people become more mature, effecting a different pattern of behaviour. Further, unexpected events like a change of the government, or a violent agitation or a natural calamity may produce a different pattern of behaviour. This contingency is not taken into account in making projections.

b) No gradual shifts: It is presumed that shifts in supply and demand occur gradually rather than instantaneously. Since these shifts are expected to continue as the price gradually reacts to new or other factors, the price change pattern is extrapolated to predict further price changes. However, economists asserted that this is a wrong proposition. The random walk theory has shaken the conceptual foundation of technical analysis. They believe that securities price changes are a series of random numbers, which occur in reaction to the random arrival of news.

c) Less Precise Tools: The greatest limitation of technical analysis is perhaps the mechanical precision it gives to the entire exercise of investment in equity share,). However, the tools are subject to errors, breakdown and misinterpretation.

d) False Signals can Occur: Technical analysis is a signalling device. Like a thermometer, it may give a false indication when there is no alarm, but when there is cause for alarm, the signal will almost invariably be flashed.

Hence, it could be concluded that technical analysis is essentially an imperfect science and an art. It helps those who have good skills, of course, not always.

Trading Strategies of Technical Analysis

Following are some of the trading rules that are the major tools for technical analysis:

Trading Rules: Many analysts rely on rules developed from the premise that the majority of investors are wrong as the market approaches peaks and troughs. Technicians try to determine whether investors are strongly bullish or bearish and then trade in the opposite direction.

Under this popular trading strategy technical analysts follow certain technical indicators:

(1) Mutual fund cash positions: Mutual funds assumed to act incorrectly before a market turning point. Low liquidity or low cash positions with mutual funds imply funds fully invested (bullish) and market is near or at peak. On the other hand high liquidity implies funds are bearish and thus considered a good time to buy.

(2) Credit balances in brokerage accounts: Credit balances in the brokerage account increases when investors sell stocks and leave the proceeds for future investments. Technical analysts look for the build-up of credit balances as a bullish indicator as the investors expect to reinvest the

money in the short term. On the other hand a lower credit balance is an indicator of bearish indicator as it suggests lower purchasing power or a sell signal as the market approaches a peak.

(3) Investment advisory opinions: If a large proportion of investment advisory services gives an indication of sell signals and are bearish with respect to future market movement, the technical analysts considers this as the approach of a bull market signal in the near future.

(4) Ratio of trading volume: The ratio of trading volume is considered a measure of speculative activity when the market is in the boom phase or an over-bought phase. Recently rather than its absolute value of high or low the direction of volume ratio is considered as better proxy for market movement.

(5) Put-Call Ratio: A higher put/call ratio indicates a pervasive bearish attitude which technicians consider a bullish indicator.

(6) Future traders bullish on stock exchange futures: As per the contrary investment strategy when the 70% percent of speculators are bullish the contrary opinion technicians say it is bearish market and on the opposite when this declines to 30% it becomes a bullish signal

(7) Confidence index: Ratio of average yield on top 10 grade corporate bonds divided by the yield on Stock markets' average of 40 bonds. This ratio is positively related to the contrary investment opinion strategy i.e., if it shows a high value then it indicates a bullish sign and if it is low it gives the bearish sign.

(8) T-Bill-Eurodollar yield spread: It measures the investor's confidence among alternative economic assets. If it shows a declining trend, the stock market experiences a trough shortly

(9) Debit balances in margin/brokerage accounts: An increase in debit balances implies buying and it is considered a bullish sign while decline in debt balance would indicate selling by the investors and would be a bearish indicator. It indicates investor's confidence in the market to invest while borrowing money.

(10) Williams's percent range (Williams's % R): This technical indicator was named after it was developed by Larry Williams. This attempts to measure overbought and oversold market conditions with the value of %R falls between a value of 100 and 0. The trading rule for this indicator follows a simple approach: If value of %R=20%, then it indicates overbought market and when the value of %R =80% the market is considered as oversold.

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 water.

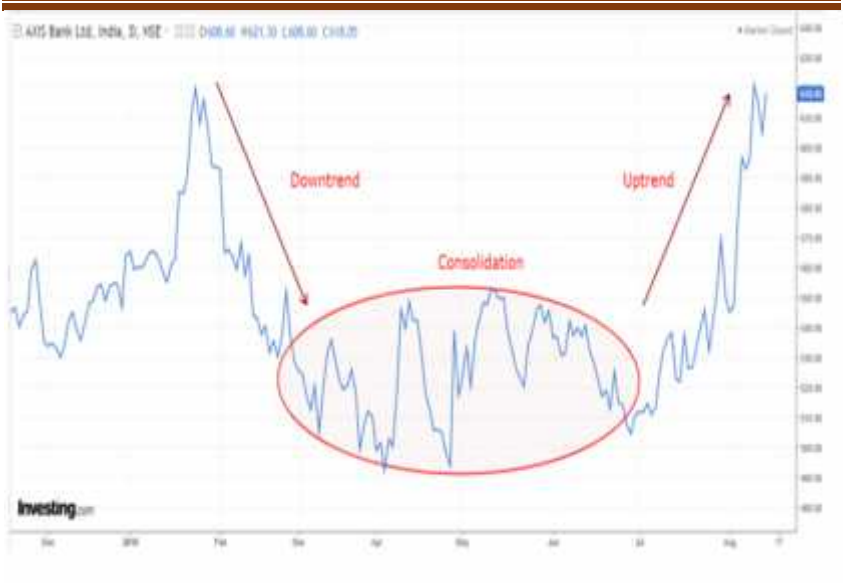
He postulated three types of price movements over time:

(1) major trends that are like tide in ocean,

(2) intermediate trends that resemble waves,

(3) short run movements that are like ripples.

Followers of the Dow theory hope to detect the direction of the major price trend (tide) known as primary trend, recognizing the intermediate movements (waves) or secondary trends that may occasionally move in the opposite direction. They recognize that a primary trend does not go straight up, but rather includes small price declines as some investors decide to take profits. It means share prices don't rise or fall in a straight manner. Every rise or fall in price experiences a counter move. If a share price is increasing, the counter move will be a fall in price and vice-versa. The share prices move in a zigzag manner. The trend lines are straight lines drawn connecting either the top or bottoms of the share price movement. To draw a trend line, the analyst should have at least two tops or bottoms. The following figure shows the trend line.



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 scrip's, 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

The 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.

Minor Trends

Minor trends are just like the ripples in the market. They are simply the daily price fluctuations. Minor trend tries to correct the secondary price movement. It is better for the investor to concentrate on the primary or secondary trends than on the minor trends.

Methods of Technical Analysis

Several methods or instruments that are commonly used by technical analysts for determining the future movement of stock prices are as follows:

a) Charting the Market

Chartists use bar charts, candlestick, or point and figure charts to look for patterns which may indicate future price movements. They also analyze volume and other psychological indicators (breadth, % of bulls Vs % of bears, put/call ratio, etc.). Strict chartists don't care about fundamentals at all.

i) **Drawing Bar (OHLC) Charts:** In a open high low close (OHLC) chart each bar is composed of 4 elements: Open, High, Low. Close Note that the candlestick body is empty (white) on up days, and filled (some colour) on down days.

ii) **Drawing Point & Figure Charts:** Point and figure charts are independent of time. An X represents an up move. The Reversal is the price change needed to recognize a change in direction. Typically, P&F charts use a 1-point box and a 3-point reversal.

b) Trends, Indicators & Patterns

There are, literally, hundreds of technical indicators used to generate buy and sell signals, but we will discuss here some of the more popular and widely used technical indicators.

i) **Trend Lines:** A trend line is a straight line that connects two or more price points and then extends into the future to act as a line of support or resistance.

- **An uptrend line** has a positive slope and is formed by connecting two of more low points. The second low must be higher than the first for the line to have a positive slope. Uptrend lines act as support and indicate that net-demand (demand less supply) is increasing even as the price rises. A rising price combined with increasing demand is very bullish and shows a strong determination on the part of the buyers. As long as prices remain above the trend line, the uptrend is considered solid and intact. A break below the uptrend line indicates that net-demand has weakened and a change in trend could be imminent.

- **Downtrend lines** act as resistance, and indicate that net-supply (supply less demand) is increasing even as the price declines. A declining price combined with increasing supply is very bearish and shows the strong resolve of the sellers. As long as prices remain below the downtrend line, the downtrend is considered solid and intact. A break above the downtrend line indicates that net-supply is decreasing and a change of trend could be imminent.

ii) Resistance Level: Resistance is the price level at which selling is thought to be strong enough to prevent the price from rising further. The logic dictates that as the price advances towards resistance, sellers become more inclined to sell and buyers become less inclined to buy. By the time the price reaches the resistance level, it is believed that supply will overcome demand and prevent the price from rising above resistance. Resistance does not always hold and a break above resistance signals that the bulls have won out over the bears. A break above resistance shows a new willingness to buy and/or a lack of incentive to sell. Resistance breaks and new highs indicate buyers have increased their expectations and are willing to buy at even higher prices. In addition,

sellers could not be coerced into selling until prices rise above resistance or above the previous high. Once resistance is broken, another resistance level will have to be established at a higher level. Resistance levels are usually above the current price, but it is not uncommon for a security to trade at or near resistance. In addition, price movements can be volatile and rise above resistance briefly. Sometimes it does not seem logical to consider a resistance level broken if the price closes 1/8 above the established resistance level. For this reason, some traders and investors establish resistance zones.

iii) Support and Resistance: Support and resistance lines indicate likely ends of trends. Resistance results from the inability to surpass prior highs. Support results from the inability to break below to prior lows. With continuation of trading gradually the support becomes resistance, and vice versa.

iv) Relative Strength Index (RSI): The Relative Strength Index (RSI) is developed by J. Welles Wilder in his 1978 book entitled "New Concepts in Technical Trading

Systems" as a price momentum oscillator to gauge overbought/oversold levels. Initially he recommended using a 14-day RSI, but now a days the 9-day and 25-day RSI have also gained popularity. RSI is a rescaled measure of the ratio of average price changes on up days to average price changes on down days. The most important thing to understand about RSI is that a level above 70 indicates a stock is overbought, and a level below 30 indicates that it is oversold (it can range from 0 to 100).

In mathematical terms: $RSI = \frac{100 - 100}{(1+RS)}$

Where, RS = Average Upward Price Move / Average Downward Price Move.

Thus, the RS is calculated as the ratio of two exponentially smoothed moving averages, AG/AL. AG is the average price gain over some period and AL is the average price drop over some the same period. Since a stocks can remain overbought or oversold for long periods of time, so RSI alone isn't always a great timing tool.

c) Simple Moving Averages

A moving average is simply the average price (usually the closing price) over the last N periods. They are used to smooth out fluctuations of less than N periods. For instance, in a 10-day moving average, the last 10 closing prices are added together and then divided by 10.

d) Price Patterns

Technicians look for many patterns in the time series of prices. These patterns are reputed to provide information regarding the size and timing of subsequent price moves. But it is worth to remember that the efficient market hypothesis (EMH) says these patterns are illusions, and have no real meaning. In fact, they can be seen in a randomly generated price series.

i) Head and Shoulders (H&S):

ii) Double Tops and Bottoms:

iii) Rounded Tops & Bottoms:

iv) Triangles:

v) Broadening Formations:

e) Moving Average Convergence / Divergence

Moving average convergence/divergence (MACD) was developed by Gerald Appel as a way to keep track of a moving average crossover system. Appel defined MACD as the difference between a 12-day and 26-day moving average. A 9-day moving average of this difference is used to generate signals. When this signal line goes from negative to positive, a buy signal is generated and when it goes from positive to negative, a sell signal is generated. MACD is best used in choppy (trend-less) markets, and is subject to whipsaws (in and out rapidly with little or no profit). Mathematically, MACD = (Shorter term moving average) – (Longer term moving average)

f) On Balance Volume

On Balance Volume (OBV) was developed by Joseph Granville, one of the most famous technicians of the 1960's and 1970's. OBV is calculated by adding volume on up days, and subtracting volume on down days as Granville believed that "volume leads price." To use OBV, you generally look for OBV to show a change in trend (a divergence from the price trend). If the stock is in an uptrend, but OBV turns down, that is a signal that the price trend may soon reverse.

g) Bollinger Bands

Bollinger bands were created by John Bollinger (former FNN technical analyst, and regular guest on CNBC). Bollinger Bands are based on a moving average of the closing price. They are two standard deviations above and below the moving average. A buy signal is given when the stock price closes below the lower band, and a sell signal is given when the stock price closes above the upper band. When the bands contract, that is, a signal that a big

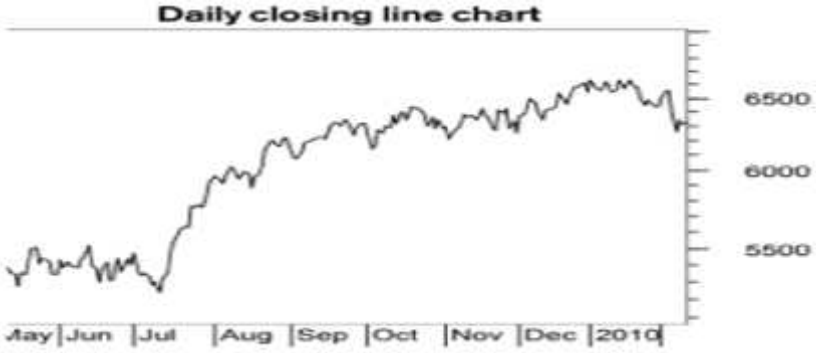
move is coming, but it is impossible to say if it will be up or down. The buy signals are far more reliable than the sell signals.

Charting Techniques

One school of thought led by William L. Jiler developed a comprehensive technique called "Chart Reading". Charts provide visual assistance detecting the emerging and changing patterns and changing patterns of price behaviour.

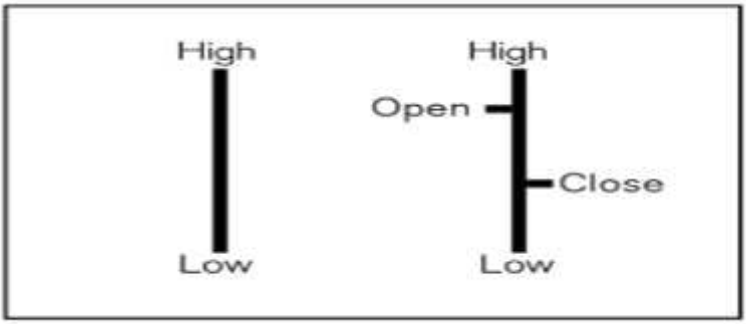
Technical Analysts use Four Basic Types of Charts

1. **Line Chart:** The most basic of the four charts is the line chart because it represents only the closing prices over a set period of time. The line is formed by connecting the closing prices over the time frame. Line charts do not provide visual information of the trading range for the individual points such as the high, low and opening prices. However, the closing price is often considered to be the most important price in stock data compared to the high and low for the day and this is why it is the only value used in line charts.



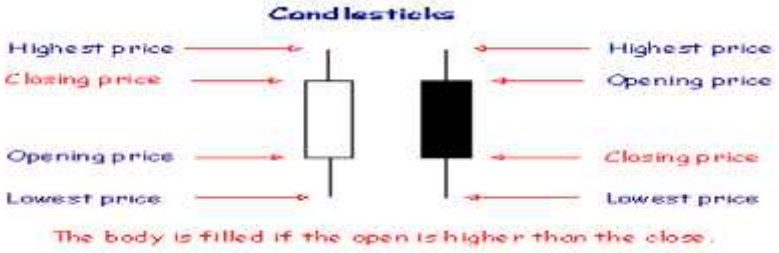
2. **Bar Charts:** Most investors interested in charting use bar charts - primarily because they have meanings familiar to a

technical analyst, but also because these charts are easy to draw. The procedure for preparing a vertical line or bar chart is simple. Suppose an investor is to draw on graph on logarithmic paper a series of vertical lines, each line representing the price movements for a time period – a day, a week, or even a year. The vertical dimensions of the line represent price; the horizontal dimension indicates the time involved by the chart as a whole.



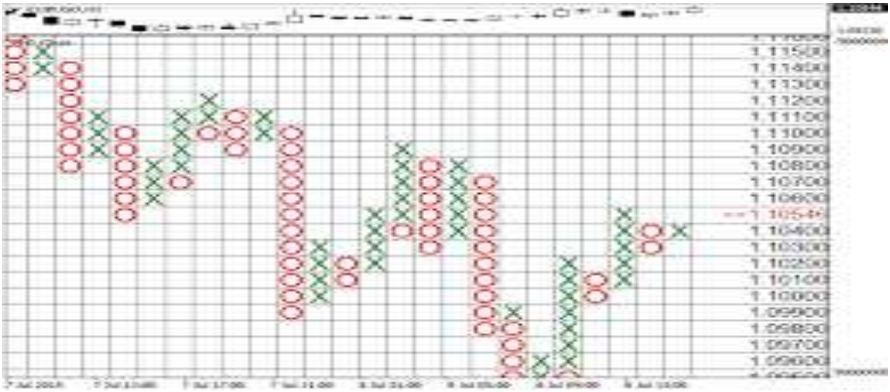
3. **Candlestick Charts:** The Candlestick chart is similar to a bar chart, but it differs in the way that it is visually constructed. Similar to the bar chart, the candlestick also has a thin vertical line showing the period's trading range. The difference comes in the formation of a wide bar on the vertical line, which illustrates the difference between the open and close. And, like bar charts, candlesticks also rely heavily on the use of colours to explain what has happened during the trading period. A major problem with the candlestick colour configuration, however, is that different sites use different standards; therefore, it is important to understand the candlestick configuration used at the chart site you are working with. There are two colour constructs for days up and one for days that the price falls. When the price

of the stock is up and closes above the opening trade, the candlestick will usually be white or clear. If the stock has traded down for the period, then the candlestick will usually be red or black, depending on the site. If the stock's price has closed above the previous day's close but below the day's open, the candlestick will be black or filled with the colour that is used to indicate an up day.



4. **Point - and - Figure Chart:** Bar chartists count on discovering certain buying and selling forces in the market,

on the basis of which they predict future price trends. These forces consist of three factors – time, volume and price. Members of another school, known as the point-and-figure chartists, question the usefulness of the first two factors. They argue that the way to predict future price fluctuations is to analyze price changes only. Consequently, they assert, no volume action need be recorded, and the time dimension (day, week, or month) should also be ignored. If only significant price changes are important, then one need only capture the significant (say, one point or more, ignoring all fractions) price changes in a stock, no matter how long it takes for the stock to register this change.



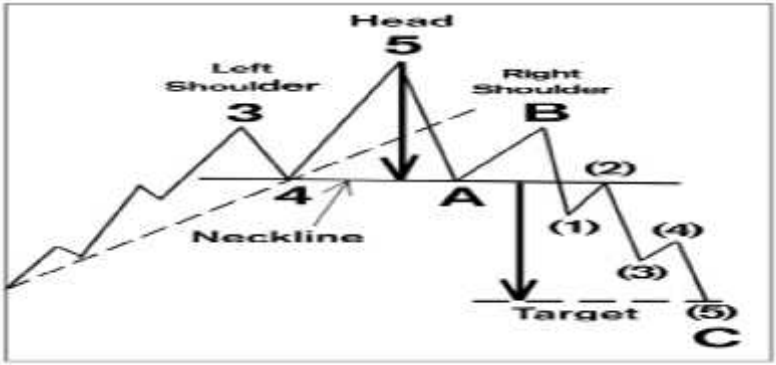
Charts are one of the most fundamental aspects of technical analysis. It is important that you clearly understand what is being shown on a chart and the information that it provides. Now that we have an idea of how charts are constructed, we can move on to the different types of chart patterns.

Chart Patterns

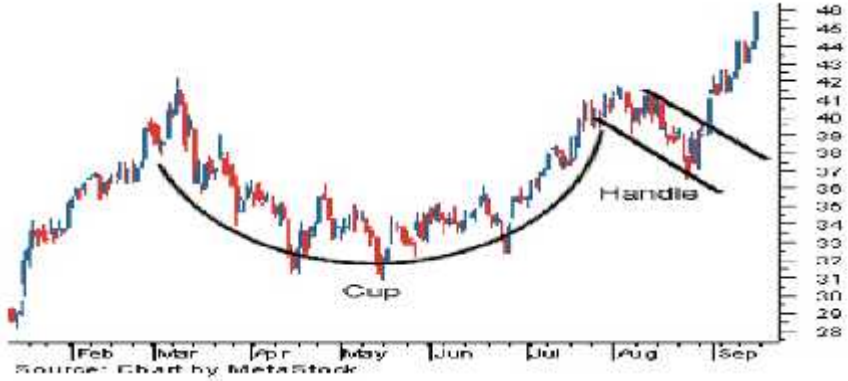
A chart pattern is a distinct formation on a stock chart that creates a trading signal, or a sign of future price movements. Chartists

use these patterns to identify current trends and trend reversals and to trigger buy and sell signals.

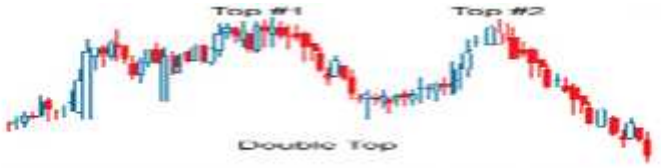
1. **Head and Shoulders:** This is one of the most popular and reliable chart patterns in technical analysis. Head and shoulders are a reversal chart pattern that when formed, signals that the security is likely to move against the previous trend.



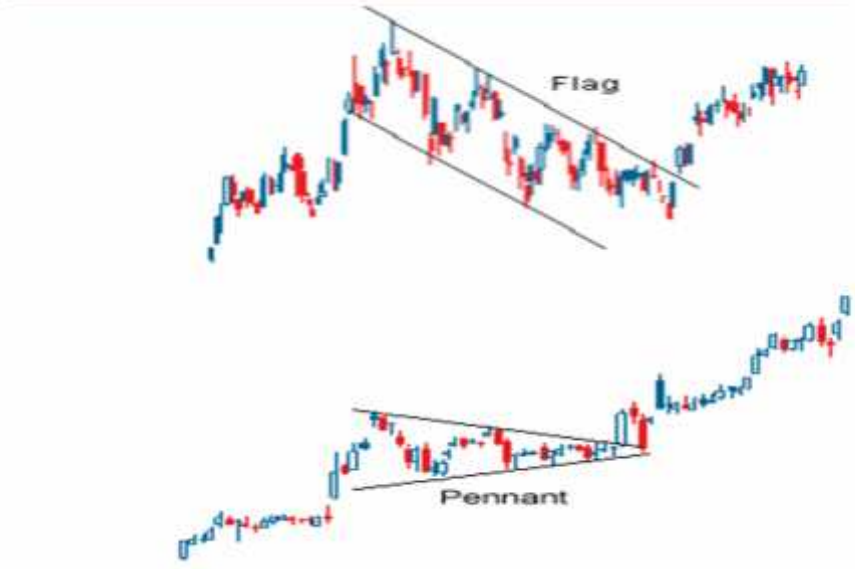
2. **Cup and Handle:** A cup and handle chart is a bullish continuation pattern in which the upward trend has paused but will continue in an upward direction once the pattern is confirmed.



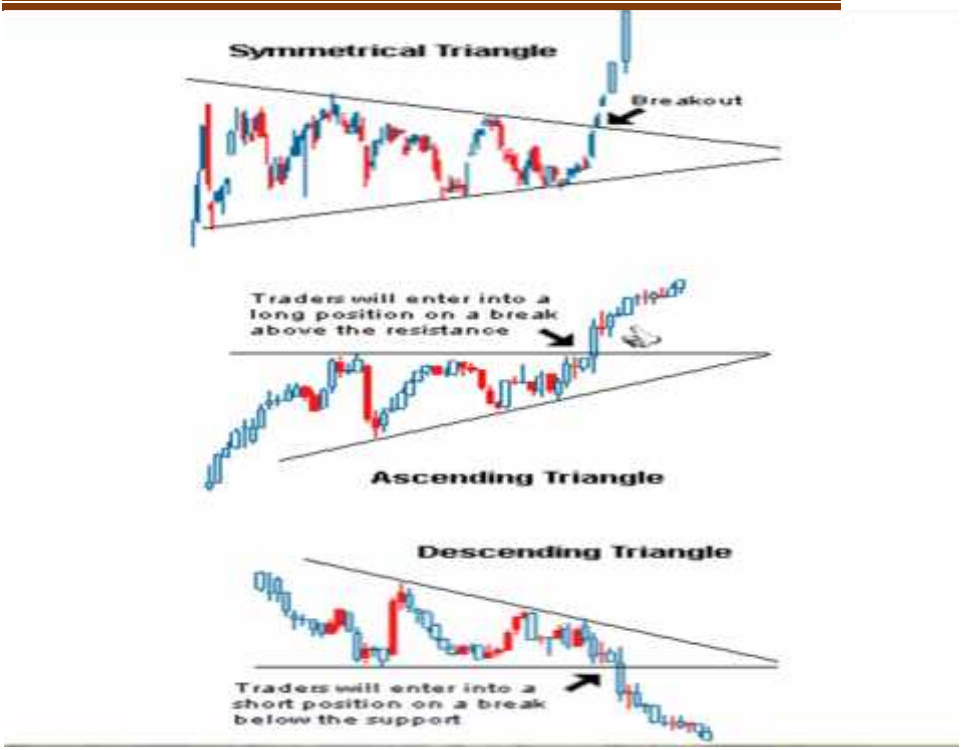
3. **Double Tops and Bottoms:** This chart pattern is another well-known pattern that signals a trend reversal - it is considered to be one of the most reliable and is commonly used. These patterns are formed after a sustained trend and signal to chartists that the trend is about to reverse. The pattern is created when a price movement tests support or resistance levels twice and is unable to break through. This pattern is often used to signal intermediate and long-term trend reversals.



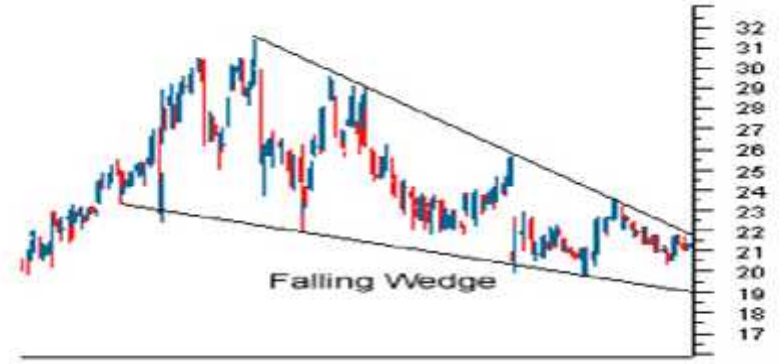
4. **Flag and Pennant:** These two short-term chart patterns are continuation patterns that are formed when there is a sharp price movement followed by a generally sideways price movement. This pattern is then completed upon another sharp price movement in the same direction as the move that started the trend. The patterns are generally thought to last from one to three weeks.



5. **Triangles:** Triangles are some of the most well-known chart patterns used in technical analysis. The three types of triangles, which vary in construct and implication, are the symmetrical triangle, ascending and descending triangle. These chart patterns are considered to last anywhere from a couple of weeks to several months.



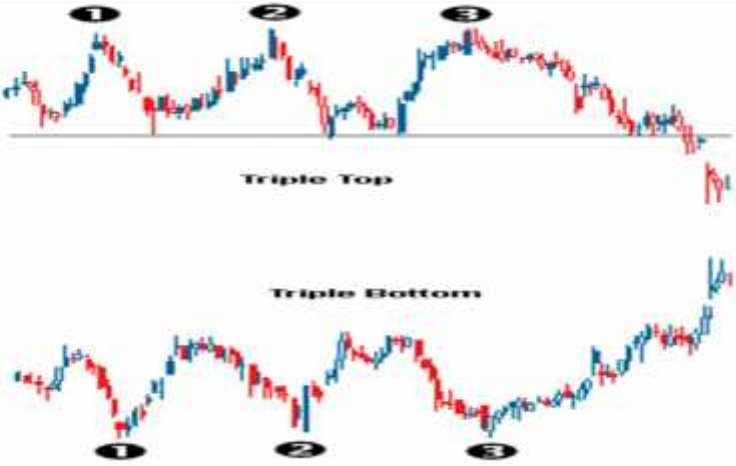
6. **Wedge:** The wedge chart pattern can be either a continuation or reversal pattern. It is similar to a symmetrical triangle except that the wedge pattern slants in an upward or downward direction, while the symmetrical triangle generally shows a sideways movement. The other difference is that wedges tend to form over longer periods, usually between three and six months.



7. **Rounding Bottom:** A rounding bottom, also referred to as a saucer bottom, is a long-term reversal pattern that signals a shift from a downward trend to an upward trend. This pattern is traditionally thought to last anywhere from several months to several years.

8. **Gaps:** A gap in a chart is an empty space between a trading period and the following trading period. This occurs when there is a large difference in prices between two sequential trading periods.

9. **Triple Tops and Bottoms:** Triple tops and triple bottoms are another type of reversal chart pattern in chart analysis. These are not as prevalent in charts as head and shoulders and double tops and bottoms, but they act in a similar fashion. These two chart patterns are formed when the price movement tests a level of support or resistance three times and is unable to break through; this signals a reversal of the prior trend.



Efficient Market Hypothesis

This hypothesis states that the capital market is efficient in processing information. An efficient capital market is one in which security prices equal their intrinsic values at all times, and where most securities are correctly priced. The concept of an efficient capital market has been one of the dominant themes in academic literature since the 1960s.

According to Elton and Gruber, "when someone refers to efficient capital markets, they mean that security prices fully reflect all available information".

According to Eugene Fama, in an efficient market, prices fully reflect all available information. The prices of securities observed at any time are based on correct evaluation of all information available at that time.

The efficient market model is actually concerned with the speed with which information is incorporated into security prices. The technicians believe that past price sequence contains information

about the future price movements because they believe that information is slowly incorporated in security prices. This gives technicians an opportunity to earn excess returns by studying the patterns in price movements and trading accordingly.

Fundamentalists believe that it may take several days or weeks before investors can fully assess the impact of new information. As a consequence, the price may be volatile for a number of days before it adjusts to a new level. This provides an opportunity to the analyst who has superior analytical skills to earn excess returns.

The efficient market theory holds the view that in an efficient market, new information is processed and evaluated as it arrives and prices instantaneously adjust to new and correct levels. Consequently, an investor cannot consistently earn excess returns by undertaking fundamental analysis or technical analysis.

Forms of Market Efficiency

The capital market is considered to be efficient in three different forms: the weak form, semi-strong form and the strong form. Thus, the efficient market hypothesis has been subdivided into three forms, each dealing with a different type of information.

1) **Weak Form of Efficiency:** Weak form EMH assumes that the current market price reflects all historical price information about a security's price. The argument for weak EMH is that all new price movements are unrelated to historical data. So, those who believe this theory think that all future share price movements cannot be predicted based on previous price moves – essentially, the market is completely unpredictable as explained in random walk theory.

If a market is deemed to be 'weak-form efficient', it would mean that no correlation exists between historical prices and successive prices. This would mean that fundamental analysis might help traders to gather information and produce above-average returns, but that no patterns exist within price charts – therefore technical analysis is an inefficient methodology for entering and exiting weak-form efficient markets.

2) **Semi-strong Form of Efficiency:** Proponents of semi-strong form EMH believe that all publicly available information is factored into the market price. The theory states that the study of this information – which could include company balance sheets and historical share prices – could not result in oversized results.

   A semi-strong form efficient market would mean that neither fundamental nor technical analysis could provide advantageous information, as all new information is instantly priced into the market. Semi-strong EMH believes that only those with privately held information could hold an advantage. Those who believe semi-strong form EMH would question the need for a large portion of financial services, such as analysts and investment researchers.

3) **Strong Form of Efficiency:** Strong form EMH states that all available information, both public and private, is priced into the price of a security. This would mean that no investor would consistently be able to beat the market as a whole, but that some individuals might make abnormal returns on occasion.

   Strong form EMH assumes that the market is perfect, and so the only way an individual could make an excessive

return is by using insider information. Both technical and fundamental analysis would be rendered moot, as neither could provide advantageous information.

Impact of Efficient Market Hypothesis

EMH is gradually gathering popularity among traders. Market participants who advocates this theory usually tend to invest in Index Funds and Exchange-traded Funds (ETFs) which are more passive in nature. This is one of the main advantages of the efficient market hypothesis.

These traders are reluctant to pay the high charges imposed by the experienced fund managers as they don't even rely on the experts to outperform the market. However, recent data suggests that there are a few fund managers who have been consistent in beating the market.

Proponents of EMH

After EMH was published by Fama in the 1960s, it remained extremely popular in both economic and business studies – and most research seemed to back up the assumptions made by EMH.

Even today, there are still arguments in favour of EMH, including:

1) **The outperformance of passive funds:** The increasing popularity of passive investing through mutual funds and ETFs is often cited as evidence that people still support EMH. In theory, if EMH is incorrect and markets are inefficient, then active funds should gain higher returns than passive funds. However, this often isn't the case over a long time period.

2) **The presence of arbitrage opportunities:** Another argument in favour of EMH is the presence of arbitragers. These are individuals who buy an asset from one marketplace and sell the same asset in another to take advantage of price differences. Arbitragers will look out for an asset whose price is out of line with expectations and bring it back to its true value – capitalising on the market move as it happens.

   If we use a long position as an example, these arbitragers would identify stocks that are trading below their true value, in order to 'buy low and sell high'. It is these traders who drive the asset toward its fundamental value. This is the strategy that underpins the EMH theory, as it relies on individuals to ensure that market prices reflect the available information accurately.

Critics of EMH

Over the years, many criticisms of EMH have emerged. We've taken a look at just a few of the popular arguments against the theory, which include:

1) **Market bubbles and crashes:** Speculative bubbles occur when an asset's price increases beyond its fair value to the extent that, when the market correction occurs, prices fall rapidly and a financial crash takes place. According to the efficient market hypothesis, market bubbles and financial crashes should not occur. In fact, the theory would argue they cannot exist as an asset's price is always accurate.
2) **Market anomalies:** Market anomalies describe a situation in which there is a difference between a share price's trajectory as set out by EMH, and its actual behaviour. In practice, efficient markets are near

impossible to maintain, and the presence of anomalies is a symptom of this. Market anomalies occur for different reasons, at different times and have different effects. But they all prove that markets are not always efficient, and that individuals do not always act rationally.

3) **Behavioural economics:** The introduction of the field of behavioural economics has also been used to criticise EMH. The idea that market participants are, on the whole, rational has increasingly come into question as we learn more and more about the psychology of trading. Behavioural economics also goes some way to explaining the market anomalies described above. Social pressures can cause individuals to make irrational decisions, which can cause traders to make errors and take on a larger amount of risk than they otherwise would. Especially the phenomena of herding, which describes individuals 'jumping on the bandwagon', is evidence that not all decisions are rational and based on information. Even factors such as a trader or investor's personality traits or emotions can have a significant impact on how they behave and the way they interact with the market.
4) **Investors have beaten the market:** There are investors who have consistently beaten the average market. Of course, the most famous is Warren Buffett – his company Berkshire Hathaway outperformed the S&P index 73% of the time between 2008 and 2018. Buffett does not believe the EMH himself and has been a vocal critic of the passive approach to investing. Instead Buffett takes a value investing approach, which seeks to identify undervalued stocks through fundamental analysis. Buffett does concede that EMH is a persuasive enough argument that it is understandable why many investors choose index

funds and ETFs. Buffett himself has never invested in an index fund.

Random Walk Theory

Random walk theory suggests that changes in stock prices have the same distribution and are independent of each other. Therefore, it assumes the past movement or trend of a stock price or market cannot be used to predict its future movement. In short, random walk theory proclaims that stocks take a random and unpredictable path that makes all methods of predicting stock prices futile in the long run.

Basic Assumptions of the Random Walk Theory

(1) The Random Walk Theory assumes that the price of each security in the stock market follows a random walk.

(2) The Random Walk Theory also assumes that the movement in the price of one security is independent of the movement in the price of another security.

Random Walk Theory: Implications for Traders

- Traders that adhere to the random walk theory will believe that it is impossible to outperform the stock market and attempting to do so would incur large amounts of risk. Believers in the hypothesis tend to take a buy and hold strategy, as the theory suggests that longer-term positions will have the most chance of success.
- Traders will look to hold a diverse selection of shares that best represent the entire stock market – exchange traded

funds (ETFs) and indices are popular instruments, as they track a range of companies' share prices.

Criticisms of Random Walk Theory

- Critics of random walk theory argue that it is possible to outperform the market through careful consideration of entry and exit points – this just takes a significant amount of time, effort and understanding.
- Through careful analysis – whether its fundamental or technical – and research into each position you want to open, it is possible to identify trends and patterns amongst the chaotic market movements. There will always be an element of random market behaviour, but traders can mitigate the risk of unpredictable movements with a risk management strategy.

Modern Portfolio Approach

MPT - Modern Portfolio Theory - represents the mathematical formulation of risk diversification in investing, that aims at selecting a group of investment assets which have collectively lower risk than any single asset on its own. This becomes possible, since various asset types frequently change in value in opposite directions. Actually investing, being a trade-off between risk and return, presupposes that risky assets have the highest expected returns.

Thus, MPT shows how to choose a portfolio with the maximum possible expected return for the given amount of risk. It also describes how to choose a portfolio with the minimum possible risk for the given expected return. Therefore, Modern Portfolio Theory is viewed as a form of diversification which explains the way of finding the best possible diversification strategy.

Assumptions of Modern Portfolio Theory

Modern Portfolio Theory relies on the following assumptions and fundamentals that are the key concepts upon which it has been constructed:

(1) For buying and selling securities there are no transaction costs. There is no spread between bidding and asking prices. No tax is paid, its only risk that plays a part in determining which securities an investor will buy.

(2) An investor has a chance to take any position of any size and in any security. The market liquidity is infinite and no one can move the market. So that nothing can stop the investor from taking positions of any size in any security.

(3) While making investment decisions the investor does not consider taxes and is indifferent towards receiving dividends or capital gains.

(4) Investors are generally rational and risk adverse. They are completely aware of all the risk contained in investment and actually take positions based on the risk determination demanding a higher return for accepting greater volatility.

(5) The risk-return relationships are viewed over the same time horizon. Both long term speculator and short term speculator share the same motivations, profit target and time horizon.

(6) Investors share identical views on risk measurement. All the investors are provided by information and their sale or purchase depends on an identical assessment of the investment and all have the same expectations from the investment. A seller will be motivated to make a sale only because another security has a level of volatility that corresponds to his desired return. A buyer will buy because this security has a level of risk that corresponds to the return he wants.

(7) Investors seek to control risk only by the diversification of their holdings.

(8) In the market all assets can be bought and sold including human capital.

(9) Politics and investor psychology have no influence on market.

(10) The risk of portfolio depends directly on the instability of returns from the given portfolio.

(11) An investor gives preference to the increase of utilization.

(12) An investor either maximizes his return for the minimum risk or maximizes his portfolio return for a given level of risk.

(13) Analysis is based on a single period model of investment.

Module V

Portfolio management

Introduction

Investment management has two general definitions. One relating to advisory services and the other relating to corporate finance.

In the first instance, a Financial Advisor or financial services company provides investment management by coordinating and overseeing a client's financial portfolio, for example, investments, budgets, accounts, insurance and taxes. In Corporate Finance, investment management is the process of ensuring that a company's tangible and intangible assets are maintained, accounted for, and put to their highest and best use.

Meaning of Portfolio Management

Portfolio – is a group of financial assets such as shares, stocks, bonds, debt instruments, mutual funds, cash equivalents, etc., A portfolio is planned to stabilize the risk of non-performance of various pools of investment.

Management – is the organization and coordination of the activities of an enterprise in accordance with well-defined policies and in achievement of its pre-defined objectives.

Portfolio Management – guides the investor in a method of selecting the best available securities that will provide the expected rate of return for any given degree of risk and also to

mitigate (reduce) the risks. It is a strategic decision which is addressed by the top-level managers.

For Example, Consider that the investor Mr. Ram has Rs. 1,00,000 and wants to invest his money in the financial market other than real estate investments. Here, the rational objective of the investor is to earn a considerable rate of return with less possible risk.

So, the ideal recommended portfolio for Mr. Ram can be as follows,

Mr. Ram Investment Portfolio

S. No.	Investor's Portfolio	Investment	Percentage	Security	Returns
1	Government Bonds	Rs. 25000	25%	High	Low
2	Bank's Fixed Deposits	Rs.15000	15%	High	Average
3	Shares	Rs. 35000	35%	Low	High
4	Mutual Funds	Rs. 25000	25%	Average	Average

Objectives of Portfolio Management

The objectives of portfolio management are applicable to all financial portfolios. These objectives, if considered, results in a

proper analytical approach towards the growth of the portfolio. Furthermore, overall risk needs to be maintained at the acceptable level by developing a balanced and efficient portfolio. Finally, a good portfolio of growth stocks often satisfies all objectives of portfolio management. The main objectives of portfolio management in finance are as follows:

(1) Security of Principal Investment: Investment safety or minimization of risks is one of the most important objectives of portfolio management. Portfolio management not only involves keeping the investment intact but also contributes towards the growth of its purchasing power over the period. The motive of a financial portfolio management is to ensure that the investment is absolutely safe. Other factors such as income, growth, etc., are considered only after the safety of investment is ensured.

(2) Consistency of Returns: Portfolio management also ensures to provide the stability of returns by reinvesting the same earned returns in profitable and good portfolios. The portfolio helps to yield steady returns. The earned returns should compensate the opportunity cost of the funds invested.

(3) Capital Growth: Portfolio management guarantees the growth of capital by reinvesting in growth securities or by the purchase of the growth securities. A portfolio shall appreciate in value, in order to safeguard the investor from any erosion in purchasing power due to inflation and other economic factors. A portfolio must consist of those investments, which tend to appreciate in real value after adjusting for inflation.

(4) Marketability: Portfolio management ensures the flexibility to the investment portfolio. A portfolio consists of such investment, which can be marketed and traded. Suppose, if your portfolio contains too many unlisted or inactive shares, then there would be problems to do trading like switching

from one investment to another. It is always recommended to invest only in those shares and securities which are listed on major stock exchanges, and also, which are actively traded.

(5) Liquidity: Portfolio management is planned in such a way that it facilitates to take maximum advantage of various good opportunities upcoming in the market. The portfolio should always ensure that there are enough funds available at short notice to take care of the investor's liquidity requirements.

(6) Diversification of Portfolio: Portfolio management is purposely designed to reduce the risk of loss of capital and/or income by investing in different types of securities available in a wide range of industries. The investors shall be aware of the fact that there is no such thing as a zero risk investment. More over relatively low risk investment give correspondingly a lower return to their financial portfolio.

(7) Favourable Tax Status: Portfolio management is planned in such a way to increase the effective yield an investor gets from his surplus invested funds. By minimizing the tax burden, yield can be effectively improved. A good portfolio should give a favourable tax shelter to the investors. The portfolio should be evaluated after considering income tax, capital gains tax, and other taxes.

Types of Portfolio Management

Portfolio Management is classified as follows,

i) Active Portfolio Management: As the name suggests, in an active portfolio management service, the portfolio managers are actively involved in buying and selling of securities to ensure maximum profits to individuals.

ii) **Passive Portfolio Management:** In a passive portfolio management, the portfolio manager deals with a fixed portfolio designed to match the current market scenario.

iii) **Discretionary Portfolio Management Services:** In discretionary portfolio management services, an individual authorizes a portfolio manager to take care of his financial needs on his behalf. The individual issues money to the portfolio manager who in turn takes care of all his investment needs, paper work, documentation, filing and so on. In discretionary portfolio management, the portfolio manager has full rights to take decisions on his client's behalf.

iv) **Non-Discretionary Portfolio Management Services:** In nondiscretionary portfolio management services, the portfolio manager can merely advise the client what is good and bad for him but the client reserves full right to take his own decisions.

Portfolio Analysis

At some time in the future, the actual return will be one of many possible outcomes. The various outcomes have some probability of occurring. The expected return is just the average of these possible returns weighted (multiplied) by the respective probabilities of occurring. Standard deviation of annual returns is most useful for measuring risk over shorter time periods. For measuring risk over longer time periods, the dispersion of possible cumulative returns is a better measure of risk. This is because over many years, a relatively small difference in annualized rate of return can result in a large difference in cumulative returns. The cumulative return on your investments at a specified future time is referred to as terminal wealth. The

dispersion of possible terminal wealth is referred to as terminal wealth dispersion.

a) The collection of multiple investments is referred to as portfolio. Mostly large size organizations and also some individuals maintain a portfolio of their different investments and hence the risk and return is considered as the entire portfolio risk and return. Portfolio may be composed of two or more bonds, stocks, securities and investments or combination of all.

b) This is because trading individual securities creates costs - brokerage costs, bid-ask spreads and price impact

c) There is a critical mass value, below which it does not pay to actively manage a portfolio - it is far better to invest in funds.

d) The larger a portfolio, the more choices become available in terms of assets - this is largely because some components of trading costs - the brokerage costs and the spread - may get smaller for larger portfolios.

e) If a portfolio becomes too large, it might start creating a price impact which might cause trading costs to start increasing again.

Approaches in Portfolio Construction

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. 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.

Commonly, there are two approaches in the construction of the portfolio of securities viz. **traditional approach and Markowitz efficient frontier approach.**

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 analysed. 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 minimise. 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.

Steps in Traditional Approach

(1) Need for current income:
The investor should establish the income which the portfolio should generate. The current income need depends upon the entire current financial plan of the investor. The expenditure required to maintain a certain level of standard of living and all the other income generating sources should be determined. Once this information is arrived at, it is possible to decide how much income must be provided for the portfolio of securities.

(2) Need for constant income:

Inflation reduces the purchasing power of the money. Hence, the investor estimates the impact of inflation on his estimated stream of income and tries to build a portfolio which could offset the effect of inflation. Funds should be invested in such securities where income from them might increase at a rate that would offset the effect of inflation. The inflation or purchasing power risk must be recognised but this does not pose a serious constraint on portfolio if growth stocks are selected.

(3) 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:

(a) Current income

(b) Growth in income

(c) Capital appreciation

(d) 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.

(4) Selection of portfolio:

The selection of portfolio depends on the various objectives of the investor. The selection of portfolio under different objectives are dealt subsequently. Objectives and asset mix- 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.

(5) 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 minimise.

(6) 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

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. 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

In the modern approach, the final step is asset allocation process that is to choose the portfolio that meets the requirement of the investor. The risk taker i.e. who are willing to accept a higher probability of risk for getting the expected return would choose high risk portfolio. Investor with lower tolerance for risk would choose low level risk portfolio. The risk neutral investor would choose the medium level risk portfolio

Markowitz Model

Markowitz model is thus a theoretical framework for analysis of risk and return and their inter-relationships. He used the statistical analysis for measurement of risk and mathematical programming for selection of assets in a portfolio in an efficient manner. His framework led to the concept of efficient portfolios. An efficient portfolio is expected to yield the highest return for a given level of risk or lowest risk for a given level of return.

Markowitz generated a number of portfolios within a given amount of money or wealth and given preferences of investors for risk and return. Individuals vary widely in their risk tolerance and asset preferences. Their means, expenditures and investment requirements vary from individual to individual. Given the preferences, the portfolio selection is not a simple choice of any one security or securities, but a right combination of securities.

Assumptions of Markowitz Theory:

The Portfolio Theory of Markowitz is based on the following assumptions:

(1) Investors are rational and behave in a manner as to maximise their utility with a given level of income or money.

(2) Investors have free access to fair and correct information on the returns and risk.

(3) The markets are efficient and absorb the information quickly and perfectly.

(4) Investors are risk averse and try to minimise the risk and maximise return.

(5) Investors base decisions on expected returns and variance or standard deviation of these returns from the mean.

(6) Investors choose higher returns to lower returns for a given level of risk.

A portfolio of assets under the above assumptions is considered efficient if no other asset or portfolio of assets offers a higher expected return with the same or lower risk or lower risk with the same or higher expected return. Diversification of securities is one method by which the above objectives can be secured. The unsystematic and company related risk can be reduced by diversification into various securities and assets whose variability is different and offsetting or put in different words which are negatively correlated or not correlated at all.

Capital Asset Pricing Model

Capital Asset Pricing Model also abbreviated as CAPM was proposed by Jack Treynor, William Sharpe, John Lintner and Jan Mossin. When an asset needs to be added to an already well diversified portfolio, Capital Asset Pricing Model is used to calculate the asset's rate of profit or rate of return (ROI).

In Capital Asset Pricing Model, the asset responds only to:

- Market risks or non-diversifiable risks often represented by beta;
- Expected return of the market; and
- Expected rate of return of an asset with no risks involved.

Where Non Diversifiable Risks are those risks which are similar to the entire range of assets and liabilities.

Capital Asset Pricing Model is used to determine the price of an individual security through Security Market Line (SML) and how it is related to systematic risks. Where Security Market Line is nothing but the graphical representation of capital asset pricing model to determine the rate of return of an asset sensitive to non-diversifiable risk (Beta).

Example:

As an investment manager you are given the following information:

Particulars	Initial price (Rs.)	Dividends (Rs.)	Market price at the year end (Rs.)	Beta (Risk factor)
Investment in equity shares of A Cement Ltd.	25	2	50	0.8
Steel Ltd.	35	2	60	0.7
Liquor Ltd.	45	2	135	0.5
Government of India bonds	1000	140	1005	0.99

Risk-free return may be taken at 14%.

You are required to calculate:

1. Expected rate of returns of portfolio in each using Capital Asset Pricing Model (CAPM).
2. Average return of portfolio.

Solution:

1. **Calculation of Expected Rate of Return on Market Portfolio**

Particulars	Initial price (Rs.)	Dividends (Rs.)	Capital Gains (Rs.)
Investment in equity shares of A Cement Ltd.	25	2	25
Steel Ltd.	35	2	25
Liquor Ltd.	45	2	90
Government of India bonds	1000	140	5
	1105	146	145

Expected Rate of Return on Market Portfolio

$$= \frac{\text{Dividends earned + Capital appreciation}}{\text{Initial investment}} \times 100$$

$$= \frac{146+145}{1105} \times 100 = 26.33\%$$

Now we can calculate the expected rate of return on individual portfolio, by applying CAPM.

$$E(Ri) = Rf + \beta i\,(Rm - Rf)$$

Cement Ltd. $= 14 + 0.8\,(26.33 - 14) = 23.86\%$

Steel Ltd. $= 14 + 0.7\,(26.33 - 14) = 22.63\%$

Liquor Ltd. $= 14 + 0.5\,(26.33 - 14) = 20.17\%$

Govt. of India bonds $= 14 + 0.99\,(26.33 - 14) = 26.21\%$

2. **Average Return of the Portfolio** $= \frac{23.86 + 22.63 + 20.17 + 26.21}{4} = 23.22\%$

The average return is also calculated by finding out the average of beta factors of all securities in the portfolio.

Average of betas $= \frac{0.8 + 0.7 + 0.5 + 0.99}{4} = 0.7475$

Average return $= 14 + 0.7475\,(26.33 - 14) = 23.22\%$

Portfolio Evaluation

Portfolio manager evaluates his portfolio performance and identifies the sources of strength and weakness. The evaluation of the portfolio provides a feedback about the performance to evolve better management strategy. Even though evaluation of portfolio performance is considered to be the last stage of investment process, it is a continuous process. The managed portfolios are commonly known as mutual funds. Various managed portfolios are prevalent in the capital market. Their relative merits of return and risk criteria have to be evaluated.

(1) Sharpe's Performance Index

Sharpe's performance index gives a single value to be used for the performance ranking of various funds or portfolios. Sharpe index measures the risk premium of the portfolio relative to the total amount of risk in the portfolio. This risk premium is the difference between the portfolio's average rate of return and the riskless rate of return. The standard deviation of the portfolio indicates the risk. The index assigns the highest values to assets that have best risk-adjusted average rate of return.

$$St = \frac{Rp - Rf}{\sigma p}$$

$$\text{Sharp Index} = \frac{\text{Portfolio average return} - \text{Risk free rate of interest}}{\text{Standard deviation of the portfolio return}}$$

Example:

Consider two portfolios A and B. On the basis of information given below, compare the performance of portfolios A and B.

Portfolio	Return I (RM)	Risk-free rate (RF)	Excess return (RF – RM)	Portfolio risk (SD)
A	21	8	13	10
B	17	8	9	8

Solution:

A = 13/10

= 1.3

B = 9/8

= 1.125

Reward per unit of risk in case of Portfolio A is relatively higher. Hence its performance is said to be good.

(2) Treynor's Performance Index

To understand the Treynor index, an investor should know the concept of characteristic line. The relationship between a given market return and the fund's return is given by the characteristic line. The fund's performance is measured in relation to the market performance. The ideal fund's return rises at a faster rate than the general market performance when the market is moving upwards and its rate of return declines slowly than the market return, in the decline. The ideal fund may place its fund in the treasury bills or short sell the stock during the decline and earn positive return.

With the help of the characteristic line, Treynor measures the performance of the fund. The slope of the line is estimated by

R_p	=	$a + \beta R_m + e_p$
Rp	=	Portfolio return
R_m	=	The market return or index return
E_p	=	The error term of the residual
a, β	=	Co-efficient to be estimate

Beta co-efficient is treated as a measure of un-diversifiable systematic risk

$$Tn = \frac{\textit{Portfolio average return-Risk free rate of interest}}{\textit{Standard deviation of the portfolio return}}$$

$$Tn = \frac{R_p - R_f}{\beta p}$$

Treynor's risk premium of the portfolio is the difference between the average return and the riskless rate of return. The risk premium depends on the systematic risk assumed in a portfolio.

Example:

Fund	Return	Risk-free Rate	Excess Return	SD	Beta
1	20	10	10	8	0.8
2	30	10	20	15	1.1

Calculate of Sharpe and Treynor ratios for two hypothetical funds.

Solution:

Sharpe Ratio Fund 1 = (20 – 10)/8 = 1.23

Sharpe Ratio Fund 2 = (30 – 10)/1.5 = 1.33

Treynor Ratio Fund 1 = (20 – 10)/0.80 = 12.50

Treynor Ratio Fund 2 = (30 – 10)/1.10 = 18.18

The ranking on both these measures will be identical when both the funds are well diversified. A poorly diversified fund will rank lower according to the Sharpe measure than the Treynor ratio. The less diversified fund will show greater risk when using standard deviation.

(3) Jensen's Performance Index

The absolute risk adjusted return measure was developed by Michael Jensen and commonly known as Jensen's measure. It is mentioned as a measure of absolute performance because a definite standard is set and against that the performance is measured. The standard is based on the manager's predictive ability. Successful prediction of security price would enable the manger to earn higher returns than the ordinary investor expects to earn in a given level of risk. The basic model of Jensen is given below:

$R_p = \alpha + ß\ (R_m - R_f)$

R_p = average return of portfolio

R_f = riskless rate of interest

α = the intercept

ß = a measure of systematic risk

R_m = average market return

Solution:

From equation 1 return on the portfolio is:

$= Rjt + Rft + \alpha 1 + Jt + (Rmt - Rft)$

$\alpha = rp - rjt$

Fund A $Rjt = 5 + 0.5\ (15 - 5) = 10$

$\alpha = 12 - 10 = 2\%$ (Excess Positive Return)

Fund B Rjt = 5 + 1.0 (15 – 5) = 15

$\alpha = 20 - 15 = 5\%$ (Excess Positive Return)

Fund C Rjt = 5 + 1.10 (15 – 5) = 16

$\alpha = 14 - 16 = -20\%$ (Negative Return)

The Jensen measure not only calculates the differential between actual and expected earnings, but also enables an analyst to determine whether the differential return could have occurred by chance or whether it is significantly different from zero in a statistical sense. The (alpha value) value in Equation can be tested to see if it is significantly different from zero by using a 't statistic'.

Portfolio Revision

In the entire process of portfolio management, portfolio revision is as important as portfolios analysis and selection. Keeping in mind the risk-return objectives, an investor selects a mix of securities from the given investment universe. In a dynamic world of investment, it is only natural that the portfolio may not perform as desired or opportunities might arise turning the desired into less that desired. In every such situation, a portfolio revision is warranted. Portfolio revision involves changing the existing mix of securities. The objective of portfolio revision is similar to the objective of portfolio selection i.e. maximizing the return for a given level of risk or minimizing the risk for a given level of return. The process of portfolio revision may also be similar to the process of portfolio selection. This is particularly true where active portfolio revision strategy is followed. Where passive portfolio revision strategy is followed, use of mechanical formula plans may be made.

Need for Portfolio Revision

No plan can be perfect to the extent that it would not need revision sooner or later. Investment plans are certainly not. In the context of portfolio management, the need for revision is every more because the financial markets are continually changing. Thus the need for portfolio revision might simply arise because the market witnessed some significant changes since the creation of the portfolio. Further, the need for portfolio revision may arise because of some investor related factors such as

1. Availability of additional wealth,
2. Change in the risk attitude and the utility function of the investor,
3. Change in the investment goals of the investors and
4. The need to liquidate a part of the portfolio to provide funds for some alternative uses. The other valid reasons for portfolio revision such as short-term price fluctuations in the market do also exist. There are, thus, numerous factors, which may be broadly called market related and investor-related, which spell need for portfolio revision.

Portfolio Revision Strategies

As are there numerous factors motivating revision of portfolio, so are there numerous strategies of portfolio revision.

Broadly speaking, investors may, depending on their investment objectives, skill and resources, follow active or passive strategies for portfolio revision. Active strategy of portfolio revision involves a process similar to portfolio analysis and selection,

which is based on an analysis of fundamental factors covering economy, industries and companies as well as technical factors.

1) **Active Revision Strategy:** An active revision strategy seeks "beating the market by anticipating" or reacting to the perceived events or information.

2) **Passive Revision Strategy:** Passive revision strategy, on the other hand, seeks 'performing as the market.'

The followers of active revision strategy are found among believers in the 'market inefficiency', whereas passive revision strategy is the choice of believers in 'market efficiency.' The frequency of trading transaction, as is obvious, will be more under active revision strategy than under passive revision strategy and so will be the time, money and resources required for implementing active revision strategy than for passive revision strategy. In other words, active and passive revision strategies differ in terms of purpose, process and cost involved. The choice between the two strategies is certainly not very straightforward. One has to compare relevant costs and benefits. On the face of it, active revision strategy might appear quite appealing but in actual practice, there exist a number of constraints in undertaking portfolio revision itself.

(a) Portfolio Revision Practices: In the US, both active and passive portfolio revision strategies have been prevalent. Studies about portfolio revision strategies followed by US investors show that the efficient market hypothesis is slowly but continuously gaining believers and these converts revise their portfolio much less often than they were doing previously because of their rising faith in market efficiency. Institutional investors in the US, on the other hand, have shown a definite tendency in the recent past for active revision

of their portfolios. This is reportedly motivated by their desire to achieve superior performance by frequent trading to take advantage of their supposedly superior investment skills.

(b) Constraints in Portfolio Revision: A look into the portfolio revision practices as discussed above highlight that there are a number of constraints in portfolio revision, in general and active portfolio revision, in particular. Let us indicate some common constraints in portfolio revision as follows:

i) Transaction cost: As you know, buying and selling of securities involve transaction costs, including brokers' fee. Frequent buying and selling for portfolio revision may push up transaction costs beyond gainful limits.

ii) Taxes: In most countries, capital gains are taxed at concessional rates. But for any income to qualify as capital gains, it should be earned after the lapse of a certain period. In many cases, the period is 36 months. Frequently selling portfolio revision may mean foregoing capital gains tax concessions. Higher the tax differential (between rates of tax for income and capital gains), the higher the constraints rise. Even for tax switches, which mean that one stock is sold to establish a tax loss and a comparable security is purchased to replace it in the investor's portfolio, one must wait for a minimum period after selling a stock and before repurchasing it, to be declare the gain or loss. If the stock is repurchased before the minimum fixed period, it is considered a wash sale, and no gain or loss can be claimed for tax purposes.

iii) Statutory Stipulation: In many countries like India, statutory stipulations have been made as to the percentage of investible funds that can be invested by investment

companies/mutual funds in the shares/debentures of a company or industry. In such a situation, the initiative to revise the portfolio is most likely to get stifled under the burden of various stipulations. Government-owned investment companies and mutual funds are quite often called upon to support sagging markets (albeit counters) or to cool down heated markets, which put limits on the active portfolio revision by these companies.

iv) **No Single Formula:** Portfolio revision is not an exact science. Even today, there does not exist a clear-cut answer to the overall question of whether, when and how to revise a portfolio. The entire process is fairly cumbersome and time-consuming. Investment literature does provide some formula plans, which we shall discuss in the following section, but they have their own assumptions and limitations.

Formula Plans

Formula Investing: Investment technique is based on a predetermined timing or asset allocation model that eliminates emotional decisions. One type of formula investing, called dollar cost averaging, involves putting the same amount of money into a stock or mutual fund at regular intervals, so that more shares will be bought when the price is low and less when the price is high. Another formula investing method calls for shifting funds from stocks to bonds or vice versa as the stock market reaches particular price levels. If stocks rise to a particular point, a certain amount of the stock portfolio is sold and put in bonds. On the other hand, if stocks fall to a particular low price, money is brought out of bonds into stocks.

These techniques are referred to as formula plans. Constant-Dollar-Value Plan, Constant Ratio Plan and Variable Ratio Plan are three very popular formula plans. Before discussing each one of these, we may point out basic assumptions and ground rules of formula plans as follows:

Basic Assumptions and Ground Rules of Formula Plan

The formula plans are based on the following assumption.

(a) The stock prices move up and down in cycle.

(b) The stock prices and the high-grade bond prices move in the opposite directions.

(c) The investors cannot or are not inclined to forecast direction of the next fluctuations in stock prices, which may be due to lack of skill and resources or their belief in market efficiency or both.

The use of formula plans call for the investor to divide his investment funds into two portfolios, one aggressive and the other conservative or defensive. The aggressive portfolio usually consists of stocks while conservative portfolio consists of bonds. The formula plans specify pre-designated rules for the transfer of funds from that aggressive into the conservative and vice-versa such that it automatically causes the investors to sell stocks when their prices are rising and buy stocks when their prices are falling. Let us now discuss, one by one, the three formula plans.

1. Constant Dollar Value Plan:

An investment strategy designed to reduce volatility in which securities, typically mutual funds, are purchased in

fixed dollar amounts at regular intervals, regardless of what direction the market is moving.

2. Constant-ratio Plan:

This is an investment strategy in which the portfolio's composition by asset class is maintained at a certain level through periodic adjustments.

3. Variable-ratio Plan:

It is a more flexible variation of constant ratio plan. Under the variable ratio plan, it is provided that if the value of aggressive portfolio changes by certain percentage or more, the initial ratio between the aggressive portfolio and conservative portfolio will be allowed to change as per the pre-determined schedule.

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