PG Programme

(Two Year Programme)

Curriculum, Programme Structure and Course Contents

(Prepared in conformity with LOCF) (2023-2024 onwards)

DEPARTMENT OF COMMERCE
Directorate of Distance and Continuing Education
Manonmaniam Sundaranar University Tirunelveli – 627012

M.Com. (Accounting and Finance)

First Year **Elective–II A**

Semester I

SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
	SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT		5	-	-	-	3	5	25	75	100

	Learning Objectives
1.	To become familiar with various Investment avenues and Portfolio Construction
2.	To understand the Equity Shares, Preference Shares and Bonds valuation models
3.	To learn about long- term and short-term investment analysis tools.
4.	To analyse with Portfolio theories.
5.	To gain knowledge in Portfolio performance methods.

Course Units

UNITI **(12 hrs)**

Investment and Portfolio Management

Investment – Meaning – Nature and scope of Investment – Investment vs Speculation –Type of Investors – Investment Avenues – Factors influencing the investment choice –Portfolio Management: Meaning and significance, Active vs. Passive Portfolio management -Strategic vs. Tactical asset allocation-Factors Affecting Investment Decisions in Portfolio Management.

UNIT II **(12 hrs)**

Valuation of Securities

Bond: Introduction– Reasons for issuing Bonds– Features of Bond–Types of Bonds– Determinants of bond safety– Bond Prices, Yields and Interest Rates– Measuring Price Volatility of Bonds– Macaulay Duration and Modified Duration- Preference Shares:

Introduction–Features of Preference Shares–Preference Shares Yield–Holding Period Return–Yield to Call–Concept of Present Value–Equity Share Valuation Models.

UNIT III **(12 hrs)**

Fundamental Analysis and Technical Analysis

Fundamental Analysis: Objectives – Economic Analysis, Industry Analysis, Company Analysis –Technical Analysis: Meaning– Assumptions – Pros and cons of technical analysis–Differences between fundamental analysis and technical analysis–Dow Theory Types of Charts –Chart Patterns–Trend Analysis–Support Line and Resistance Line Volume Analysis – Indicators and Oscillators – Simple Moving Average – Exponential Moving Average–Relative Strength Index– Bollinger Band–Elliott Wave Theory.

UNIT IV **(12 hrs)**

Efficient Market Hypothesis

Efficient Market Hypothesis–Markowitz Model, Arbitrage Pricing Theory–Sharpe's Single index portfolio selection method– Capital Asset Pricing Model (CAPM).

UNIT V **(12 hrs)**

Portfolio Performance Evaluation

Portfolio Performance Evaluation– Meaning- Need for Evaluation- Methods of Calculating Portfolio return- Sharpe's Ratio- Treynor's Ratio- Jensen's Differential Returns- Portfolio Revision – Need for Portfolio Revision- Formula Plans.

Course Outcomes

Students will be able to:

CO No.	CO Statement	Knowledge level
CO 1	Examine investment options and structure a portfolio	K4
CO 2	Assess the value of Equity Shares, Preference Shares and Bonds	K5
CO 3	Examine stock performance through fundamental and Technical analysis	K4
CO 4	Examine the various Portfolio Theories.	K4
CO 5	Evaluate the portfolio performance.	K5

Books for study:

1. Prasanna Chandra (2021), "Investment Analysis and Portfolio Management" ,6th Edition, McGraw Hill, Noida, UP
2. Rustagi RP (2022), "Investment Analysis and Portfolio Management", 5th Edition, Sultan Chand &Sons, New Delhi
3. BhallaV.K.(2019), "Investment Management", 19th Edition, S.Chand & Co.Ltd., New Delhi

Books for reference:

1. Donald E. Fischer, Ronald J.Jordan, Ashwini. K. Pradhan (2018), "Security Analysis Portfolio Management", 7th Edition, Pearson Publication Pvt. Ltd., India, Noida
2. AvadhaniV.A.(2016), "Securities Analysis and Portfolio Management", 12th Edition, Himalaya Publishing House, Mumbai
3. RanganathanM. and Madhumathi R (2012), "Security Analysis and Portfolio Management",2nd Edition., Pearson Education India Pvt Ltd, Noida
4. PunithavathyPandian (2019), "Securities Analysis and Portfolio Management", Himalaya Publishing House, Mumbai
5. Subrata Mukherjee (2021), "Security Analysis and Portfolio Management", S.Chand & Co. Ltd, New Delhi

Web references:

1. https://www.iare.ac.in/sites/default/files/lecture_notes/IARE_SAPM_Lecture_Notes.pdf
2. https://www.studocu.com/in/document/galgotias-university/equity-portfolio- management/portfolio-management-lecture-notes-1-10/17701348
3. https://www.educba.com/fundamental-analysis-vs-technical-analysis

Note: Latest edition of the books maybe used

Mapping of course outcomes with Pos and PSOs

	POs						PSOs		
	1	**2**	**3**	**4**	**5**	**6**	**1**	**2**	**3**
CO1	3	3	1	3	2	3	2	2	3
CO2	3	3	1	3	2	3	2	3	2
CO3	3	3	2	3	2	3	2	3	2
CO4	2	3	1	3	2	2	2	3	2
CO5	3	3	1	3	2	2	2	3	2

High– 3 **Medium– 2** **Low–1**

UNIT – I
INVESTMENT AND PORTFOLIO MANAGEMENT

1.1 INTRODUCTION

Investment is an activity that is engaged in by people who have savings. But all savers are not investors. Investment is different from savings. *It means many things to many persons; one person may purchase gold in large quantity for the purpose of price appreciation and consider it as his investment. Another person may take an insurance policy to avail so many benefits it offers in future. A farmer buying a piece of agricultural land. A cricket fan betting on the outcome of a cricket match. A government employee buying mutual fund units. An officer buying 100 shares of TCS Ltd for Rs.1000. That is his investment yet another person may lend some amount to somebody with an intention to get* interest at a *future date and may consider the same as his investment.*

In all these cases, one thing is common i.e, *the amount is invested with the aim of achieving some additional income or growth in value or the prospects expected are always greater than what they invested now*. Hence, it involves the commitment of resources that have been saved in the hope that some benefits will accrue in future.

1.1.1 MEANING OF INVESTMENT

Investment aims at multiplication of money at higher or lower rates depending upon whether it is a long-term or short-term investment and whether it is risky or risk-free investment. Investment activity therefore involves creation of assets or exchange of assets with profit motive.

1.1.2 Definition:

Donald E.Fischer and Ronald J. Jordan: Investment means *"An Investment is a commitment of funds made in the expectation of some positive rate of returns. If the investment is properly undertaken, the return will commensurate with the risk the investor assumes"*

F.Amling: The term investment means "*The purchase by an individual or institutional investor of a financial or real asset that products a return proportion to the risk assumed over some future investment period"*

From the above definitions, two points are clear i.e

i). Expectation of return is an essential of Investment.

ii). Return will be proportionate to the risk assumed over some future investment period.

1.2. CONCEPT OF INVESTMENT

Basically, there are four concepts, which are as follows,

1. **Financial Investment.**
2. **Economic Investment.**
3. **Business Investment.**
4. **General Investment.**

1. Financial Investment

Allocation of monetary resources to asset that are expected to yield some gain or positive return over a given period of time is known as financial investment. Purchasing of Shares, Debentures, Post Office Saving Certificates and insurance policies all are investment in the financial assts.

These investment rage from safe investment of risky investments such investments yield return in the form of interest, dividend, rend, premium, pension benefits or the appreciation of the value of their principal capital. While making investments in these assets, decisions as to type of investment amount of investment, period of investment etc, are necessarily to be taken.

2. Economic Investment

According to the economists, investment means the net addition to the economy's capital stock, which consists of goods, and services that are used in the production of other goods and services. Hence, it includes all type of plant and machinery, equipment, inventory and construction materials as well as all types of services.

3. Business Investment

Putting money in a private business is known as business investment. For instance, a man is investing Rs. 2,00,000 in his newly started provisional store.

4. General Investment

Some times, some persons invest in the avenues, which do not give any additional income such as interest, dividend, rent etc., or capital growth. Such people are called "The man on the Street"

EXAMPLE:

If a person buys a car or scooter for his personal use, such an investment is called general investment or personal investment. He will not receive any additional income from such an investment.

1.3. NATURE OF INVESTMENT / OBJECTIVES OF INVESTMENT / INVESTMENT PRINCIPLES.

The main investment objectives are **increasing the rate of return and reducing the risk**. Other objectives like **safety, liquidity, profit, taxation, inflation, government control, legality, transferability and tangibility** can be considered as subsidiary objectives.

1. Safety Of Investment

The selected investment avenue should be under the legal and regulatory frame work.

It will not under the legal frame work, it is difficult to represent the grievances, if any approval of the law itself adds a flavor of safety.

2. Liquidity

Marketability of the investment provides liquidity to the investment. The liquidity depends upon the marketing and trading facility. If a portion or the investment could be converted in to cash without much loss of time, it would help the investor meet the emergencies. Stocks are liquid only if they command good market by providing adequate return through dividends and capital appreciation.

3. Profit

The main reason we invest our idle funds is for earining a profit. Profit can be realized in either or both of the following forms.

i.Capital Appreciation – Capital Appreciation occurs when an investment is disposed of at a higher value as compared to price for which it was purchased. The difference between the net selling price and purchased priced, when positive, denotes capital appreciation.

ii. Yield – Yield from an investment is derived in the form of interest or dividend.

4. Tax Implications

While planning investment strategy, one should bear in mind the various provisions of tax laws vis-à-vis investment income and other incomes. Important taxation provisions

and tax planning possibilities are to be kept in mind while planning an investment strategy.

5. Inflation: In our country, every year the purchasing power of the rupee declines as we suffer form a continuing inflation in prices. So our capital is eroded every year to the extent of the rate of inflation.

6. Government Control

Various government statutes and controls, the Gold Control Act and Urban Land Ceiling act, affect investment decisions and so need to be considered.

7. Legality

Law relating to Minors, Estates, Trusts, Shares and Insurance should be studied and all investments should be approved by law.

8. Transferability

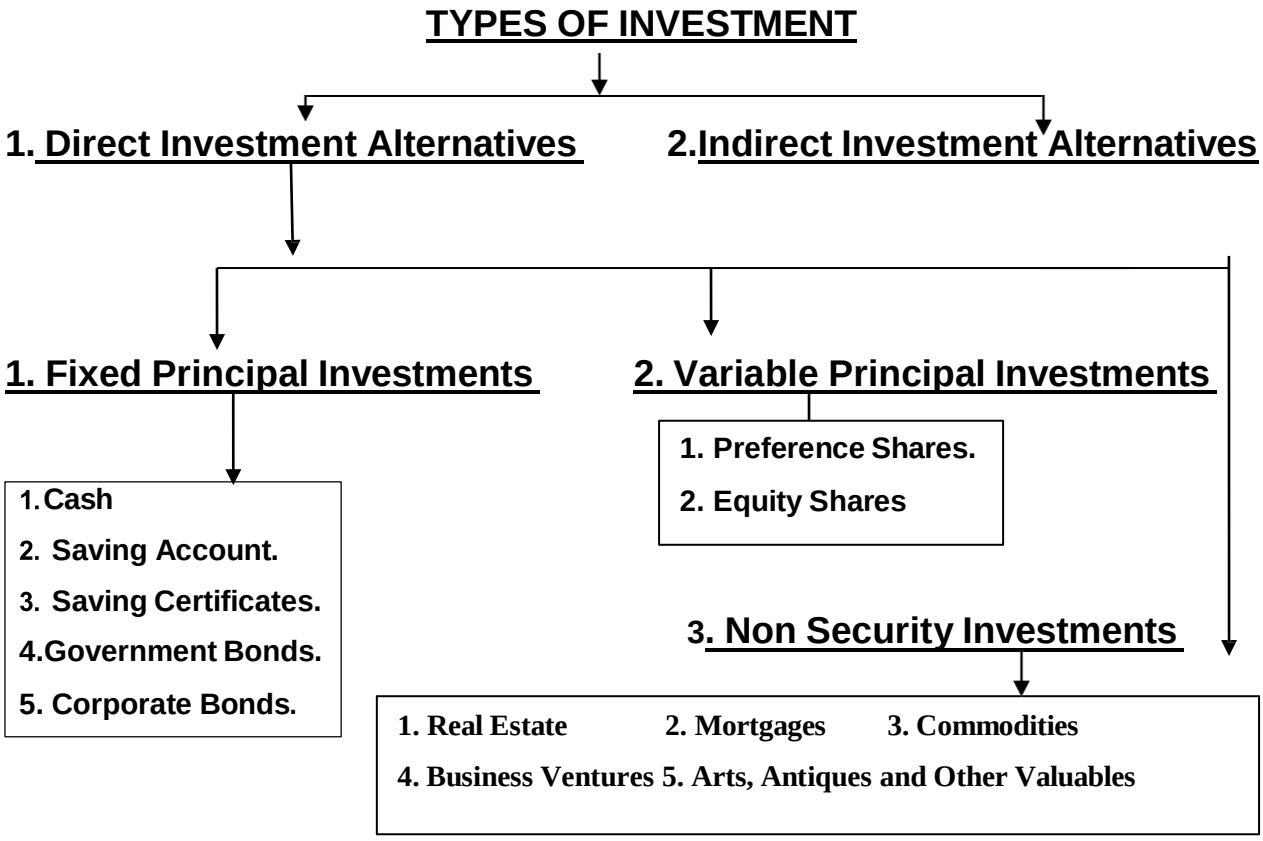
Though the investor presumably buys high grade securities and holds for the long term, the securities must be easily and legally transferable both on monetary and Non-monetary terms.

9. Tangibility

Tangible assets do not yield an income. Some investors prefer such investments because intangible assets may have lost their value due to price level changes, regulation of Law, or social collapse.

1.4. TYPES OF INVESTMENT

Many types of investment media or channels are available for making investments. Some media are simple and direct, whereas others are complex necessitating detailed analysis and investigation. Some are popular, whereas others are relatively new. Some are appropriate for one type of investor, while others may be suitable to rest of the types of investors. Whatever it is, the ultimate aim of the investor is to derive a variety of investments that fulfill his preference risk and expected return.



I. Direct Investment Alternatives

Direct investment alternatives are those where the individual makes his own choice and investment decision. These include the following.

1. **Fixed Principal Investments.**
2. **Variable Principal Investments.**
3. **Non – Security Investments.**

1. Fixed Principal Investments

Fixed Principal Investments are those principal amount and the terminal value are known with certainty. There will not be any change in the terminal value. These investments include the following.

a). Cash

Cash has a definite and constant value. It does not earn any return, while in hand. It is the safest investment. However, only a small portion is to be kept as cash balance, it does not carry any interest or earn any return.

b). Saving Accounts

Saving accounts have a fixed return. They differ only in terms of time period. However, only a very low return can be received from this type of investment. Here the principal amount is fixed plus interest earned.

c). Saving Certificates

Saving certificates are quite recent, some of the examples of saving certificates are national saving certificates, bank saving certificates, Postal saving certificates etc. Here also the principal amount is fixed plus interest earned over time.

d). Government Bonds

State governments and central governments issue government bonds. These bonds are having a fixed maturity value. They bear a fixed rate of return over time.

e). Corporate Bonds / Debentures

Corporate bonds and debentures also have a fixed maturity value and a fixed rate of return over time.

2. Variable Principal Investments

The variable principal investments are those whose terminal values are not known with certainty. They include the following:

a). Preference Shares

Preference Shares are those shares some preferential rights in other class of shares. Preference share is a share that bears a stated dividend and has priority of claim over equity shares in the matter of dividend and assets in the event of liquidation of the company.

b). Equity Shares

Equity share is a security that represents ownership interest in a company. It is issued to those who have contributed in setting up an enterprise. They have neither fixed return nor maturity period.

c). Convertible Securities

Convertible Securities such as convertible debentures or preference shares can convert them in to equity shares according to certain prescribed conditions and thus have features of fixed principle securities supplemented by the possibility of a variable terminal value.

3. Non – Security Investments

Non- security investments are those, which are other than corporate securities. These include the following:

a). Real Estate: It denotes the ownership of residential as well as commercial properties. It is less than corporate securities. The terminal value of real estate is uncertain, but generally there is a price appreciation. However, we can claim depreciation while filing the income tax returns.

b). Mortgages

Mortgages it denotes the financing of real estate. It has a periodic fixed income and the principal is recovered at a stated maturity date.

c). Business Ventures

Business ventures denote direct ownership investments in new or growing business before firms sell securities on a public basis.

d). Commodities

In the process of buying and selling commodities while purchasing the goods we pay the price for them. That is why this transaction is also bought under investment.

e). Art, Antiques and other Valuables

Art, Antiques and other valuables include silver, gold, jewelers. They are also another type of specialized investments which offer aesthetic qualities also.

II. Indirect Investment Alternatives

Indirect Investment Alternatives are those in which the individual has no direct hold on the amount he invests. He contributes his savings to certain organizations such as LIC, UTI etc. and depends upon them to make investments on his behalf.

1.5. Investment Managers and Portfolio Structures

At the heart of the investment management industry are the managers who invest and divest client investments. A certified company investment advisor should conduct an assessment of each client's individual needs and risk profile. The advisor then recommends appropriate investments.

1 Asset Allocation

The different asset classes and the exercise of allocating funds among these assets (and among individual securities within each asset class) is what investment management firms are paid for. Asset classes exhibit different market dynamics, and

different interaction effects; thus, the allocation of monies among asset classes will have a significant effect on the performance of the fund. Some research suggested that allocation among asset classes have more predictive power than the choice of individual holdings in determining portfolio return. Arguably, the skill of a successful investment manager resides in constructing the asset allocation, and separately the individual holdings, so as to outperform certain benchmarks (e.g., the peer group of competing funds, bond and stock indices).

2 Long-term Returns

It is important to look at the evidence on the long-term returns to different assets, and to holding period returns (the returns that accrue on average over different lengths of investment). For example, over very long holding periods (e.g. 10+ years) in most countries, equities have generated higher returns than bonds, and bonds have generated higher returns than cash. According to financial theory, this is because equities are riskier (more volatile) than bonds which are themselves more risky than cash.

3. Diversification

Against the background of the asset allocation, fund managers consider the degree of diversification that makes sense for a given client (given its risk preferences) and construct a list of planned holdings accordingly. The list will indicate what percentage of the fund should be invested in each particular stock or bond. The theory of portfolio diversification was originated by Markowitz and effective diversification requires management of the correlation between the asset returns and the liability returns, issues internal to the portfolio (individual holdings volatility), and cross-correlations between the returns.

4. Investment Styles

Investment Style selection depends upon risk appetite and return expectation. There are a range of different styles of fund management that the institution can implement. For example, growth, value, market neutral, small capitalization, indexed, etc. Each of these approaches has its distinctive features, adherents and, in any particular financial environment, distinctive risk characteristics. For example, there is evidence that growth styles (buying rapidly growing earnings) are especially effective when the companies able to generate such growth are scarce; conversely, when such growth is plentiful, then there is evidence that value styles tend to outperform the indices particularly successfully.

5. Performance Measurement

Fund performance is the acid test of fund management, and in the institutional context accurate measurement is a necessity. For that purpose, institutions measure the performance of each fund (and usually for internal purposes components of each fund)

1.6. Factors Affecting Investment Decisions in Portfolio Management

Nowadays, banks and Internet Investment businesses provide a diverse range of investment opportunities for new investors. Whether we choose to make our own investing selections or to work with a professional, there are a number of considerations to keep in mind while deciding on which investments to include in our portfolio.

Interest rates

Investment is financed by a combination of internal savings and external borrowing. Investment decisions are thus heavily influenced by interest rates. Borrowing money is a costly endeavor when interest rates are high. When interest rates are high, the rate of return on bank deposits increases. The interest payments you forego while investing are known as the "opportunity cost.

1. Evaluation

According to the marginal efficiency of capital, an investment's rate of return must be greater than the interest rate for it to be profitable. A minimum rate of return of 5% is required for an investment project if interest rates are 5%. If interest rates rise, fewer investment opportunities will be profitable. If interest rates on loans were reduced, more potential investment projects would be feasible.

2. Economic Growth

Businesses spend money in preparation for future growth in customer demand. As demand drops, companies reduce spending. If the economy shows signs of improvement, companies are likely to ramp up investment in anticipation of a surge in demand. Investment seems to be cyclical, according to data. Investment levels drop during a recession and then rise again when the economy improves. Investment, according to the accelerator hypothesis, is sensitive to the tempo of economic expansion. In other words, as the economy improves, investment expenditure will rise along with it. This is because a higher growth rate indicates that the economy is doing better. Investment, according to the accelerator hypothesis, follows the business cycle.

3. Confidence

Saving is less risky than investing. Only when businesses are positive about their cost structure, demand, and economic outlook can they make investments. Keynes believed that businessmen's "animal spirits" were a major factor in investing decisions. Keynes observed irrational assurance often accompanied confidence. Growth and interest rates are important factors in determining consumer confidence, but the overall economic and political atmosphere also plays a role. Uncertainty about the future might limit or even stop business investment.

4. Inflation

Inflation is a potential threat to long-term investment gains. Because inflation is both high and volatile, it hinders one's ability to plan ahead financially. If companies have doubts about the sustainability of the economy and the effects of inflation, they may be unwilling to make investments. Countries that have had low and stable inflation for an extended period of time tend to increase their investment levels.

5. Productivity of Capital

The allure of a long-term investment might be affected by technological changes. Around the end of the nineteenth century, developments like Bessemer steel and enhanced steam engines gave businesses a compelling reason to invest in cutting-edge technology. If technical advancement stalls, businesses will spend less since their profits will decrease.

6. Availability of Finance

As a result of the liquidity crisis that began in 2008, numerous financial institutions reduced their lending to customers. Investment loans from banks were very hard to come by. As a result, companies who wanted to invest were unable to do so despite historically low loan rates. One such factor that might effect long-term investment is the ability to save money. If savings rates are high, more money might be directed toward investments. The more money people deposit in banks, the more money they can give out. A decrease in national savings reduces the quantity of money available for investment.

7. Government Policies

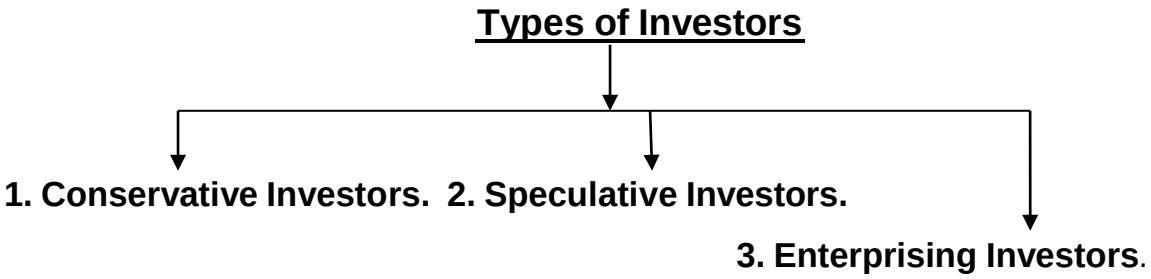
Investing might be made more challenging by some government rules. Strict zoning regulations, for instance, might put off investors. Yet, government subsidies and tax cuts may encourage investment.

8. Investment Knowledge

The level of expertise and experience of the investor is a critical consideration. While weighing their investment possibilities, no shady investor will consult their circle of friends and relatives. Investors with more expertise generally make their own choice on which possibilities to pursue.

1.7 TYPES OF INVESTORS

Generally Investors are classified into the following three categories. They are as follows.



1. Conservative Investors

Conservative investors buy the securities with a view to invest their savings in profitable income earning securities. They generally retain the security for a considerable length of time and care much about the safety of their investment. They will sell their holdings only when they are assured of a profit and that too for cash only. Hence, they are also called genuine investors.

2. Speculative Investors

Speculative investors are popularly known as speculators. They buy securities with a hope to sell them in future at a profit. They are not interested in holding the securities for longer period. Hence, their objective of buying the securities is to sell them and not to retain them. They are interested only in price differentials.

3. Enterprising Investors

They assume risks very boldly as well as willingly. They aim at earning income as well as enjoying capital appreciation.

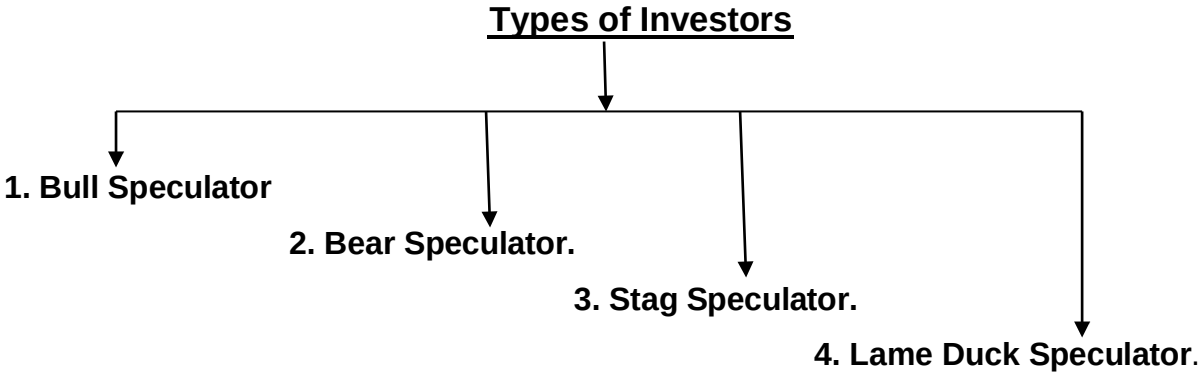
1.8. SPECULATION

Speculation means taking up the business risk in the hope getting short term gain. Speculation essentially involves buying and selling activates with the expectation of getting profit from the price fluctuations.

Speculation means the purchase or sale in the present followed by a sale or purchase in the future in the expectation of making a profit from a price change in the meantime.

Types of Speculators

The Speculators are classified in to following four categories.



1. Bull / Tejiwala Speculator

This type of speculator expects a rise in the price of the securities in which he deals. Therefore, he enters in to purchase transactions with a view to sell them at a profit in the future. If his expectation becomes a reality he shall get the price difference without actually taking delivery of the securities.

2. Bear Speculator

A bear is a pessimistic speculator who expects a sharp fall in the prices of certain securities. He inters in to selling contracts in certain securities of a future date. If the price of the security falls as he expects, he shall get the price difference. A bear usually presses its victim down the ground.

3. Stag Speculator

A stag is considered as a cautious investor when compared to the bulls or bears. He is a speculator who simply applies for fresh shares in new companies with the sole objective of selling them at a premium or profits as soon as he gets the shares allotted.

4. Lame Duck Speculator

When a bear is unable to meet his commitment immediately, he is said to be struggling like a lame duck. For instance, the bear who enters into a selling contract should sell the contacts, securities on the date fixed. If the buyer instead of accepting the price difference demands the actual delivery, the bear should also arrange for their supply.

1.9. Difference between Investment and Speculation

INVESTMENT	SPECULATION
1.Type of Return Expected. Investment involves purchase of an asset to enjoy the return on it.	Speculation also involves purchase of an asset but with the expectation of profit on sale on account of its price change.
2. Length of Commitment. In investment the length of commitment is comparatively long term.	In speculation, investment is always held for a short term.
3. Amount of Risk. Investments is considered to involve minimum risk	Speculation is considered to involve Maximum risk.
4. Purpose of Investment The purpose of investment is to receive a stable as well as regular return.	The purpose of speculation is to enjoy capital gain
5. Type of Contract In case of investment the type of contract is that of creditor nature.	It is of Ownership nature in speculation.
6. Sources of Income The sources of income are the earnings of enterprises for an investor.	Here it is change in the market price for a speculator
7. Type of Analysis The investor Constantly evaluates the securities through a scientific analysis of intrinsic value.	Speculator is interested in market action and price movements.

1.10 QUESTIONS FOR DISCUSSION

1. Describe in detail about different types of Investment.
2. State the Objectives of Investment.
3. List out a Concepts of Investment.
4. Explain in detail about factors influencing in Investment Decisions.
5. Distinguish between Investment and Speculation.
6. State the Types of Investors.
7. Describe in detail about types of Speculators.

UNIT I – Investment and Securities Markets

5-Mark Questions

S. No	Questions	Bloom's Level
1	Define investment and explain its nature.	Remembering
2	Differentiate between investment and speculation.	Analyzing
3	Explain types of investors.	Understanding
4	Describe various investment avenues.	Understanding
5	Explain active and passive portfolio management.	Applying

8-Mark Questions

S. No	Questions	Bloom's Level
1	Analyze factors influencing investment decisions.	Analyzing
2	Evaluate the significance of portfolio management.	Evaluating
3	Discuss strategic vs tactical asset allocation.	Analyzing
4	Examine the scope of investment in modern markets.	Understanding
5	Explain factors affecting portfolio management decisions.	Applying

UNIT – II

Valuation of Securities

2.1 Debenture

A debenture is an instrument acknowledging a debt issued under the common seal of the company and is a contract for the repayment of the principle sum at a specified date and for the payment of interest at a specified rate per cent till the time the principle sum is repaid. Under section 2 (12) of the Companies Act 1956,

Debenture have been defined as “Debenture includes debenture stock, bond and any other securities of the company whether constituting a charge on the company’s asset or not”

2.2 Features of Debenture

(i) A debenture is a document or certificate which acknowledges the debt of a company.

(ii) Mode and period of repayment of principle and interest is fixed.

(iii) It is considered as external equity or long term borrowing.

2.3 Types of Debentures / Bonds

Debentures can be divided into various categories on different basis

(A). On the basis of Security

(B). On the basis of Redemption

(c). On the basis of Records

(D). On the basis of Coupon rate

(E). On the basis of convertibility

(A). On the basis of Security

1. Mortgage or Secured debentures

Those debentures which are secured either by fixed charge or a floating charge on the asset of the company. A regular mortgage deed of trust deed is entered into the company and the debenture holder.

2. Unsecured debentures.

Those debentures which are not secured by a fixed charge, are known as unsecured debentures

(B). On the basis of Redemption

1. Redeemable debenture.

Those debentures which are repaid by the company at the end of the period or at a specified period in lump sum or in installments, as called as redeemable debentures

2. Irredeemable debenture.

Those debentures which are not repayable during lifetime of the company, are know as irredeemable debentures.

(C). On the basis of coupon rate:

1. Specified coupon rate.

These debentures are issued with a specified rate of interest, which is called coupon rate. The rate may be fixed or floating. Different debentures may have different rates of interest.

2. Zero coupon rate.

These debentures do not carry a specific rate of interest. In order to compensate the investors such debentures are issued at a substantial discount.

(D). On the basis of records

i. Registered debentures.

Those debentures in respect of which the names, addresses, and particulars of debenture holder are kept in a register of the company.

2. Bearer debentures.

These debentures keep no record of debenture holder. Payment of the interest is made on the production of coupon attached to the debenture.

(E). On the basis of Convertibility:

1. Convertible debentures.

Debentures which have the option of exchanging the whole or part of the amount of their debenture for shares after a specified time period are called convertible debentures.

2. Non-convertible debentures.

Those debentures which have no option of converting the value of debenture into equity share.

2.4. Valuation of bonds and debenture

Basically, the value of a bond is the present value of all the future interest payments and maturity value, discounted at the required return on bond commensurate with the prevailing interest rate and risk.

$Bond\ Value$ = $Interest$1 / (1 + r) 1 + $Interest$2 / (!+ r) 2 + ⋯ + $Interesti$ + $Maturity\ value$ / (1 + r) n

Where, Interest 1 to n= interest in period 1 to n.

Unless otherwise mentioned, the maturity value of the bond is the face value.

Different situations

(i) When the required rate of return is equal to the coupon rate, the bond value becomes equal to the par value.

(ii) When the required rate of return is more than the coupon rate, the bond value be less than its par value. The bond in this case would be sold at a discount.

(iii) When the required rate of return is less than the coupon rate, the bond value would be more than its par value. Therefore, in this case, bond would be sold at a premium.

Example: 1

Let us assume the face value of the bond is Rs 1,000, coupon rate is 10% payable semi annually. Yield to maturity is 9%. It matures in 5 years. What is the value of the bond?

Solution:

Interest = 100/2 = Rs.50 semi annually N= 10 years Yield to maturity= 9%, therefore, semi annual yield= 4.5%

Bond value= 50 / (1+0.045)2 + 50 / (1+0.045)2 +.....+ 50 / (1+0.045)10

Solving the above equation, we get Bond value = Rs. 1,040 approx Method of Valuation

2.5 Valuation method can be categorized into two ways:

(1) **Convertible Debenture**

(2) Non-convertible Debenture

(1) Valuation of Convertible Debenture

Valuation of bonds with the maturity period when a bond or debenture has reached maturity, its value can be determined by considering annual interest payment plus its terminal or maturity and this is done using the present value concept to discount the cash flows and the result will be compared the market value of the bond to ascertain whether it is overvalued or undervalued.

Example: 2

K is thinking of purchasing a 3 year bond worth 40,000 rs carrying a nominal coupon rate of 10%. K's required rate of return is 6%. How much he should be willing to pay now to purchase the bond if it matures at par?

Solution:

Interest = 10% *40,000= 4,000 p.a

N = 3 years, kd= 6% M = 40,000

Vd = 4,000* PVAF (6%, 3) + 40,000* PVIF (6%,)

= (4,000* 2.673) + (40,000*0.840)

= Rs 44,292

2.6.Valuation of Non - convertible bonds and debentures

This type of bond or debenture has a maturity of greater than 10 years and holder has an option to convert it into security. To compensate for having value through the option to convert the bond into stock, a convertible bond has a coupon rate lower than that of similar non-convertible debt.

The key benefit of raising money by selling convertible bonds is a reduced interest payment. The advantage for companies issuing convertible bonds is that, if the bonds are converted to stock, company's debt vanishes. However, in exchange of the benefit of reduced interest payment, the value of shareholders equity is reduced due to stock dilution which is expected when bondholders convert their bonds into new shares. An option price to value a convertible bond is:

Price convertible bond = price straight bond + price stock call option – price bond call option+ price bond put option

Example: 3.

Bond ABC matures in 5 years with a coupon rate of 7% and maturity value is Rs. 1,000. The rate of discount is 5% and interest is paid annually.

Solution:

1 st year's cash flow = 70 to year four is also 70 Year five = 1,070 The PV is as follows:-

Year one = 70/(1.05)1 = 66.67

Year two = 70/(1.05) 2 = 63.49

Year three = 70/(1.05)3 = 60.47

Year four = 70/(1.05)4 = 57.59

Year five = 1070/(1.05)5 = 838.37

Now, value of bond = 66.67+63.49+60.47+57.59+838.37

= Rs. 1086.59.

2.7 Preference share

Preference shares represent a stock with dividends that are paid to shareholders before common stock dividends are paid out. In the event of a company bankruptcy, preferred stock shareholders have a right to be paid company assets before equity shareholders. Preference shares typically pay a fixed dividend, whereas common stocks do not. And unlike common shareholders, preference share shareholders usually do not have voting rights.

The preference shares are different from the equity shares in the sense that preference shares enjoy these two preferences over the equity shares:

(i) The dividend is paid to preference shareholders before any dividend is to paid to equity shareholders,

(ii) At the time of winding up, preference shareholders are paid prior to equity shareholders.

Thus, preference shares are considered as a hybrid security with both features of the bonds and the share ownership.

2.8. Features of Preference Share

Preferred stock is a special class of shares which may have any combination of features not possessed by common stock. The following features are usually associated with preferred stock:

- Preference in dividends
- Preference in assets, in the event of liquidation
- Convertibility to common stock.
- Call ability, at the option of the corporation
- Restricted voting rights
- Claims on income and assets
- Fixed Dividend
- Cumulative dividend
- Sinking fund
- Call feature
- Participation feature

2.9 Types of Preference Shares

The following way classified preference shares.

a). Cumulative Preference Shares.

b). Non- Cumulative Preference Shares.

c). Redeemable Preference Shares.

d). Irredeemable Preference Shares.

e).Participating Preference Shares.

f). Non-participating Preference Shares.

g).Convertible Preference Shares.

h).Non-Convertible Preference Shares.

a). Cumulative Preference Shares

Cumulative preferences shares are those shares, the arrear dividend of these shares go on accumulating till they are paid. These arrear dividends are to be paid first out of profits before any amount is paid to any other types of shareholders.

b). Non- Cumulative Preference Shares: In case of these preference shares, the unpaid dividend of any year does not accumulate, that is dividend of a particular year, is paid only out of the profits made during the particular year.

c). Redeemable Preference Shares

These shares are repaid, after a fixed period or after giving prior notice under certain conditions made clear at the time of their issue. They are redeemed only out of excess profits or out of the proceeds of a new issue of shares.

d). Irredeemable Preference Shares

Irredeemable preference shares can be redeemed only upon the company goes for liquidation or winding up of the company.

e). Participating Preference Shares

Participating preference shares also get a share out of the surplus profits remaining after paying dividend to the equity shareholders at a fixed rate as determined by the company articles.

f). Non- Participating Preference Shares: These kinds of preference shares get only their fixed rate of dividend. They do not enjoy the right to participate in the surplus profit.

g). Convertible Preference Shares

The holders of these shares have a right to convert their shares in to equity shares within a specified period of time. The right of conversion must be authorized by the Articles of association.

h). Non-Convertible Preference Shares

These types of preference shares cannot be converted in to equity shares.

2.10 Valuation of Preference Shares

Preference Shares are issued by corporations or companies with the primary aim of generating funds. A preference share usually carries a fixed stated rate of dividend. The dividend is payable only upon availability of profits. In case of cumulative preference shares, arrears of dividends can be accumulated and in the year of profits common stock holders can be paid dividend only upon settlement of all the arrears of cumulative preference dividends.

Preference share holders have preference right over payment of dividend and settlement of principal amount upon liquidation, over common share holders. A preference share can be irredeemable or redeemable. Redeemable preference shares have a fixed maturity date and irredeemable preference shares have perpetual life with only dividend payments. periodically upon profit availability. Preference shares can also be cumulative and non-cumulative.

Assumptions

Following two assumptions are relevant while ascertaining the value of preference shares:

(1) The dividend on preference shares is received once a year and that the first dividend is received at the end of one year from the date of acquisition or date of purchase.

(2) The company intends to pay the dividend to preference shareholders so that the stream of preference dividend is considered to be known with certainty.

For valuation purpose, preference shares are divided into two categories:

(i) Redeemable preference shares

(ii) Irredeemable preference shares

(i) Valuation of Redeemable Preference Shares

Basically, the value of redeemable preference shares represents the present value of the future cash flows. The future cash flows associated with a redeemable preference shares includes the stream of dividends at a fixed rate of dividend and the maturity payment at the time of redemption.

These future cash flows are discounted at an appropriate rate to find out the value of redeemable preference share as follows:

(Po) = Dividend1 / (1+r) 1 + Dividend2 / (1+r) 2 + ⋯ + Dividendn+Maturity value / (1+r) n

Where, Po= Value of a preference share Dividend 1 to n = Annual fixed dividends in periods 1 to n. N= Life of the preference share

r= required rate of return of the preference shareholders

Example : 4

The face value of the preference share is 500$. And the rate of dividend is 12%. The shares are redeemable after 5 years. Calculate the value of preference shares if the required rate of return is 13%.

Solution:

Annual preference dividend= Rs 500*12%= Rs 60

P0, value of redeemable preference share = Rs. 60_1 / $(1+.13)^1$ + Rs60_2/$(1+.13)^2$ + ⋯ + Rs60_5 + Rs.500 /$(1+.13)^5$

After solving this equation, we get value of the preference shares as Rs. 482 approximately.

Example: 5

XYZ Ltd. issues 15% preference shares of the face value of 100 Rs each at a floatation cost of 4%. Find out the cost of capital of preference shares if the preference shares are redeemable after 10 years at a premium of 10%.

Solution:

using the formula given above,

Po= $\sum^{10}_{i=1}$ $15/(1+k)^i$ +$110/(1+k)^{10}$

At kp= 16%, the R.H.S. of the equation may be written as:

= 15(PVAF(16%,10))+110(PVF(16%,10)) = 15(4.833)+110(.227) = Rs 97.76

At kp= 17%, the R.H.S. of the equation may be written as: =15(PVAF(17%,10))+110(PVF(17%,10)) = 15(4.659)+110(.208) = Rs 92.76

By interpolating between 16% and 17% the value of Kp comes to 16.31 % as follows:

Kp= 16%+(97.46-96)*1 /(17%-16%) (97.46-92.76)

where 1 represents the difference

(ii) Valuation of Irredeemable Preference Shares

The value of irredeemable preference shares may be defined as the present value of the perpetuity of fixed dividends on preference shares. Symbolically, it is defined as:

Irredeemable preference share value : Dividend / Required return on Preference Share.

or

Kp= PD/Po

Where, PD= Annual preference dividend

Po= Net proceeds on issue of preference shares

Kp= Cost of capital of preference shares

Example : 6

A company issues 10% irredeemable preference shares. The face value per share is 100 Rs, but the issue price is 95 Rs. What is the cost of preference share? What is the cost if the issue price is 105 Rs.

Solution:

When issue price is 95 Rs.

Kp= preference dividend/ issue price = 10/95= 0.1053 or 10.53% When issue price is 105

Kp= preference dividend/ issue price = 10/105= 0.0952 or 9.52%

Example: 7

XYZ Ltd. issues 15% preference shares of the face value of 100 Rs each at a floatation cost of 4%. Find out the cost of capital of preference shares if the preference shares are irredeemable.

Solution:

Kp= PD/Po

= 10/(100-4) = 15/96= 0.1563 or 15.63%

2.11 Equity Shares

Every company needs a lot of funds to do business. For this company takes the help of public. Issuing shares to public is one of the ways to generate funds from public for doing business. Whenever someone buys shares from a company he gets a share certificate in return. There are basically two kinds of shares namely Equity shares and Preference shares. Section 43 of the companies act 2013 explains that there are two kinds of shares issued by companies:

(A) Equity shares

The act defines equity shares for a company limited by shares to be shares which are not preference shares. They are of following types

1) Equity shares with voting rights

2) Equity shares with differential rights

These differential rights can be with respect to dividend, voting or in accordance with such rules as may be prescribed.

2.12. Valuation of Equity Shares.

There are different approaches to find out the value of equity shares on the basis of the earnings of the company. These are

1. Gordon model

2. Walter Model

3. Price Earnings Ratio approach

1. Gordon model

One very popular model clearly relating the market value of the firm to dividend policy is developed by Myron Gordon. **He explained that either company will distribute its profit as dividends or it will retain them for investing purpose on the basis of availability of projects in future.**

Assumptions of Gordon Model:

Following are the assumptions on which the Gordon's model is based:

1. All the financing needs of the firm are met by issue of equity shares.
2. There are no loans and debentures. In short there is no external financing through borrowed funds.
3. The internal rate of return (r) of the firm is constant.
4. The appropriate discount rate (K e) of the firm remains constant.
5. The firm and its stream of earnings are perpetual
6. There are no corporate taxes to be paid by the firms.
7. The retention ratio (b), once decided upon, is constant. Thus, the growth rate (g) = br is constant forever.
8. K e is always greater than br. (i.e. K e > br = g) if this condition is not fulfilled, we cannot get a meaningful value for the share.

According to Gordon's dividend capitalization model, the market value of a share (P0) is equal to the present value of an infinite stream of dividends to be received by the share. Thus:

P0 = EPS (1-b)/ (k e – br)

The above equation explicitly shows the relationship of following in the determination of the value of the share (P0):

Current earnings (EPS,),

Retention ratio (b),

Rate of return on reinvestment (r) and The all-equity firm's cost of capital (k e)

Example: 8

A firm has earnings per share of Rs 10.Its retention ratio is 80%.The return on investment is 25%. The cost of equity is 15%.find the value of share.

Solution:

$$P0 = EPS (1-b)/ (k e – br)$$

Here Current earnings (EPS) = 10

Retention ratio (b) = 80%

Rate of return on reinvestment (r) = 25%

cost of capital (k e) = 15%

P0 = 10 (1-.80)/ (.15 – (.80 x .25)) = Rs 40

2. Walter Model

Professor James E. Walter gave a model that supports that the value of share is found by adding the value of infinite stream of dividends and return from retained earnings. His model shows clearly the importance of the relationship between the firm's internal rate of return (r) and its cost of capital (k) in wealth of shareholders.

Walter's model is based on the following assumptions:

1. All the financing of the firm is done through retained earnings. There is no debt or new issue of equity.
2. The firm's internal rate of return (r) and its cost of capital (k) are constant;
3. All earnings are either distributed as dividend or reinvested internally immediately.
4. EPS and dividend per share remain constant.
5. The firm has a very long or infinite life.

Walter's formula to determine the market price per share (P) is as follows:

$$P = D/k e +(r (E-D)/k e)/k e$$

Example: 9

ABC ltd has cost of capital (k e) of 10%.Earnings per share (E) = Rs10 and the rate of return on investments (r) = 8%.The Dividend payout ratio50%. Calculate the market price of the shares.

Solution:

The market price of the share can be found by applying the following formulae:

D/P ratio = 50% EPS = Rs10

Therefore, according to D/P ration of 50%, Dividend per share i.e.

D = 10 x 50% = Rs5.

So price of the share is: P = 5 + [0.08 / 0.10] [10 -5] 0.10 = Rs90

3. Price Earnings Ratio approach

The price earnings ratio can be understood as the price for a stock that an investor is paying for Rs1 of a company's profit.

In other words, if a company is reporting that the earning per share is of Rs2 and the stock is selling at a price of Rs20 per share, the price earnings ratio is 10 (Rs20 per share divided by Rs2 resulting in earnings per share = 10 p/e).The price earnings ratio is usually written as P/E Ratio. To find out the value of an equity share we have to multiply the EPS (earning per share) with the P/E multiplier or the price earnings ratio. But here it becomes important to understand how P/E ratio is determined. Generally it is computed by dividing the current stock price by earnings per share for the most recent 12 months. It is followed so closely because it relates the market's expectation of investors about the performance of the company in future, embedded in the price component of the equation, to the company's actual recent earnings performance. The greater the expectation, the higher a multiple of current earnings investors is willing to pay for the promise of future earnings. Thus the value of share can be determined if we know the following:

- EPS i.e. earnings per share
- P/E ratio or price earnings ratio

Value = EPS X P/E ratio.

Example: 10

A company has EPS of Rs 20.Its price earnings ratio is 2.Find the value of the equity in this case.

Solution:

Value = EPS X P/E ratio. = 20 x 2 = Rs.40

2.13 QUESTIONS FOR DISCUSSION

1. Write on the three-step valuation process.
2. Write on features of bonds and explain them in detail
3. What are the reasons for issuing Bonds?
4. Define a bond and also explain the different types, in detail.
5. What are some of the general characteristics found in preference shares?
6. Explain preference shares in detail.
7. State the features of Equity Shares.
8. Describe in detail about different approaches to Valuation of Equity Shares.

UNIT II – Valuation of Securities

5-Mark Questions

S. No	Questions	Bloom's Level
1	Define bonds and list their features.	Remembering
2	Explain types of bonds.	Understanding
3	What is bond yield?	Remembering
4	Define preference shares and their features.	Understanding
5	Explain the concept of present value.	Applying

8-Mark Questions

S. No	Questions	Bloom's Level
1	Analyze the relationship between bond prices, yields, and interest rates.	Analyzing
2	Evaluate determinants of bond safety.	Evaluating
3	Discuss duration and modified duration of bonds.	Understanding
4	Examine equity share valuation models.	Analyzing
5	Explain yield to maturity and holding period return.	Applying

UNIT - III

FUNDAMENTAL ANALYSIS

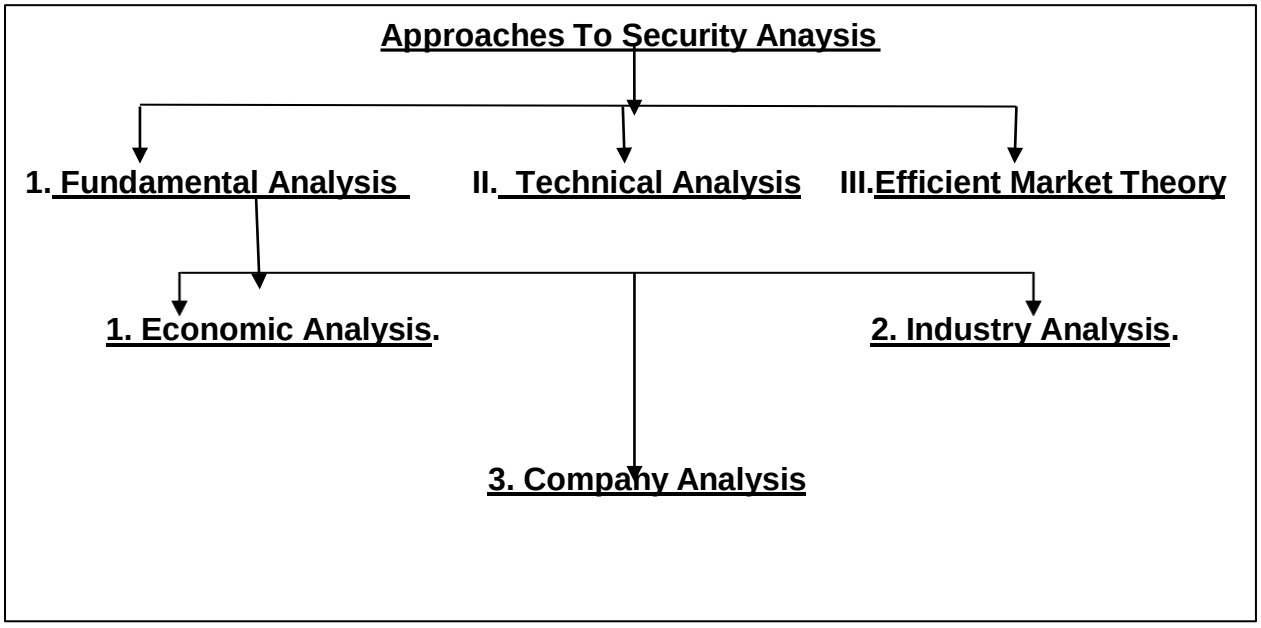
3.1 SECURITY ANALYSIS

The aim of the Security analysis is to find out intrinsic value of a security. The intrinsic value also called as the real value of a security is the true economic worth of a financial asset. The real value of the security indicates whether the present market price is overpriced or under priced in order to make a right investment decision. The actual price of the security is considered to be a function of a set of anticipated capitalization rate.

Security analysis refers to analyzing the securities from the point of view of the scrip prices, intrinsic value of shares, return and risks. The analysis will help in understanding the behavior of security prices in the market for investment decision making.

3.2. APPROACHES TO SECURITY ANAYSIS

There are various approaches to security analysis, which are as follows:



3.3. FUNDAMENTAL ANAYLSIS

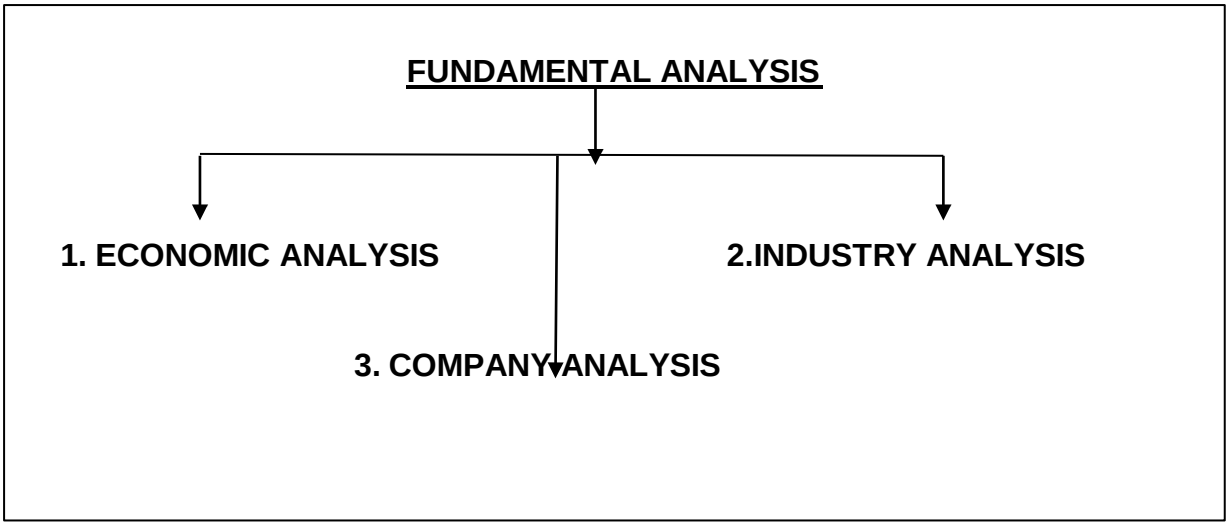
The investor, while buying stock, has the primary purpose of gain. If he invests for a short period of time, it is speculative but when he holds it for a fairly long period of time,

the anticipation is that he would receive some return on his investment. Fundamental analysis is a method of finding out the future price of a stock which an investor wishes to buy. The method of for forecasting the future behavior of investments and the rate of return on them is clearly through an analysis of the broad economic forces in which they operate, the kind of industry to which they belong and the analysis of the company's internal working through statements like income statement, balance sheet and statement of changes of income.

Fundamental Analysis is really a logical and systematic approach for estimating the future dividends and share price. It assumes that share price is determined by a number of fundamental factors regarding Economy, Industry and Company. Fundamental analysis is in other words, a detailed analysis of the fundamental factors affecting the performance of companies.

3.4 STAGES IN FUNDAMENTAL ANALYSIS

Fundamental Analysis thus involves three stages are as follows:



3.5. ECONOMIC ANALYSIS.

The performance of a company depends much on the performance of the company. If the economy is boom, the industries and companies in general trend to be prosperous. On the other hand, if the economy is in recession, the performance of companies will be generally poor.

Investors are interested in studying those economic variables, which affect the performance of the company in which they proposed to invest. Analysis of these economic variables would give an idea about future corporate earnings and

the payment of dividends and interest to investors. Hence, analysis of macroeconomic environment is essential to understand the behavior of the stock prices.

3.5.1 ECONOMIC VARIABLES / MICROECONOMIC FACTORS

The following Macroeconomic or Economic variables affecting the performance of the company.

ECONOMIC VARIABLES / MICROECONOMIC FACTORS

1. **Gross Domestic Product.**
2. **Saving and Investment.**
3. **Inflation / Rate of inflation.**
4. **Interest Rates**
5. **Budget.**
6. **Balance of Payment.**
7. **Tax Structure.**
8. **Monsoon and Agriculture.**
9. **Infrastructure Facilities.**
10. **Demographic Factors.**
11. **Research and Development Facilities**

1. Gross Domestic Product.

The GDP indicates the growth rate of the economy and it represents the total value economy and it represents the total value of goods and services produced in the country The growth of GDP reflects the growth of various sectors, companies and per capita income. If the GDP growth rate increases certainly the return available for investors also will increase.

2. Saving and Investment.

The savings made by the large number of people and various sectors determine the Growth of economy. If the people save a part of their earnings and make investments in various shares and securities then corporate can easily make investments in expansion and Modernization programmes and this will fuel their earning capacity.

3. Rate of Inflation.

The rate of inflation prevailing in the country determines the real economic growth. If money supply increases without increase in production of goods and services then inflation rises. During inflationary conditions more money chasing few goods. When inflation is high the cost of living and cost of business operations are increasing. The returns available from stock market investments will be declining.

4. Interest Rates.

The interest rate affects the cost of financing of the firms. A decrease in interest rate of implies lower cost of finance for firms and more profitability. More money is available at a lower rate for the borrowers. Availability of cheap fund encourages speculation and rise in the price of shares.

5. Budget.

The annual budget proposals submitted by the State and Central Governments affects the economic growth. When budget deficit increases the economic growth will slow down and inflation starts rising. Surplus budget may result in deflation. Hence, balanced budget is highly favorable to the stock market.

6. Balance of Payment.

The balance of payment is the record of a countries money receipts from and payment abroad. The difference between receipts and payments may be surplus or deficit. Balance of payment is a measure of the strength of rupee on the external account. If the deficit increases, the rupee may depreciate against other currencies, the rupee may depreciate against other currencies, thereby affecting the cost of imports. The industries involved in the export and import are considerably affected by the changes in foreign exchange rate.

7. Tax Structure.

The various taxes imposed by the Central and State Government on individuals and corporate affects their purchasing ability. High corporate tax leaves the companies with fewer surpluses which will be inadequate to pay dividend to shareholders and to meet business development expenditures.

8. Monsoon and Agriculture.

In India around 79% of the people lives in rural areas and engaged in agriculture and allied activities. The agriculture mainly depends on monsoon. Moreover many sectors get raw materials from agriculture. Therefore the monsoon and agricultural output influences the stock market.

9. Infrastructure Facilities / Resources.

Natural resources are very much important for the economic growth of the country. Water, oil, mines resources are the backbone of any economy. Technological discoveries in recycling of materials, nuclear and solar energy and new synthetics offers lot of potential for growth of economy.

10. Demographic Factors / Population of the country.

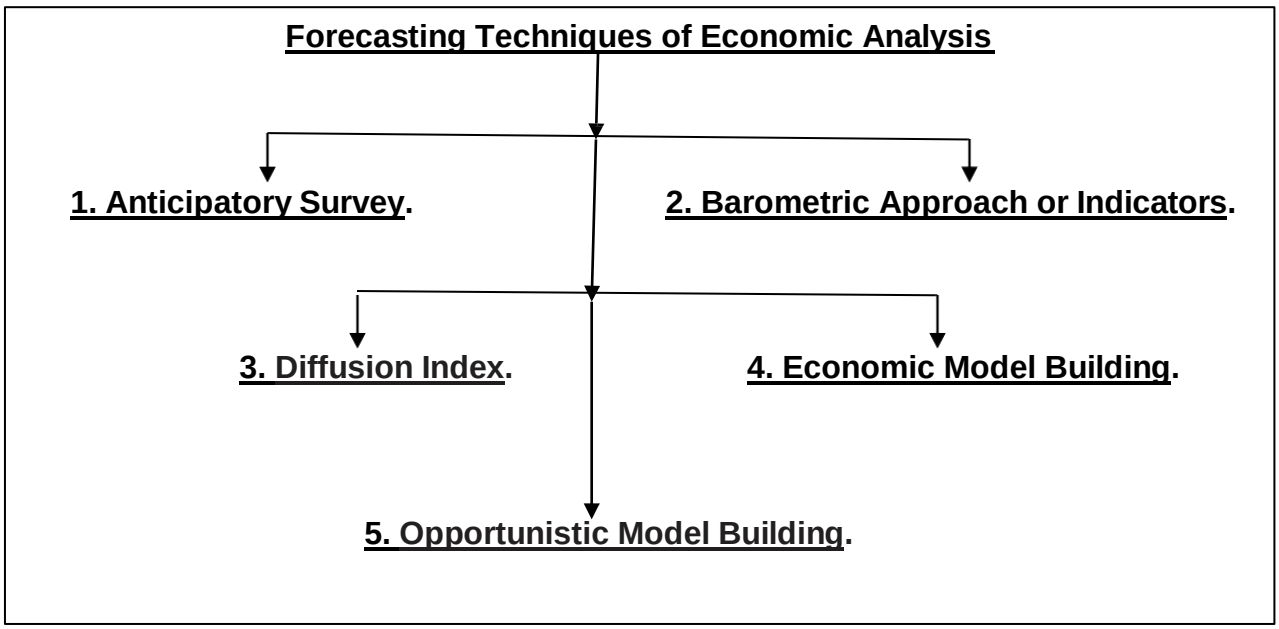
Analyzing the population of the country gives a complete picture about the kind of labour force. Increase in population results in increase in demand for many goods and services and at the same time the availability of manpower also increases. If the population explosion is strategically used by the country certainly it is an asset.

11. Research and Development Facilities.

The economic growth mainly depends on the emphasis given on research and development and the infrastructure development. The investor should select the industry based on the above issue. For example the Government is focusing on the development of infrastructure, telecommunication and power sector. These sectors future growth rate in very high.

3.5.2 ECONOMIC FORECASTING OR ECONOMETRIC FORECASTING.

To estimate the stock price changes, an analyst has to analyses the macroeconomic environment and the factors peculiar to the industry. The economic activities affect the corporate profits, investors' attitude and the share prices. For the purpose of economic analysis, an analyst should be familiar with the forecasting techniques.



1. Anticipatory Surveys.

The Survey method of economic forecasting involves getting the concerned peoples Opinion about the current development and outlook of the economy and specific sector. It is very difficult to meet all the concerned people and a sample can be taken and a questionnaire or interview schedule can be administered with the selected sample. Thus survey involves the collection of first hand information from the concerned respondents and this method is more reliable. However the survey method is a time consuming and costly method.

2. Barometric Approach or Indicators.

The economic forecasting can be done with the help of analyzing the economic indicators. The factors like GDP, capital investments, corporate profits, liquidity, rate of interest, forex level, currency value, unemployment rate, percapita income etc, gives lot of insight and indicate the direction of the economic growth.

a).The economic indicators may be classified as Leading Indicator, Coincidental Indicator and Lagging Indicator. **The Leading Indicators** give a hint about what would happen to economy. This indicates the future direction of the economy. The examples of Leading Indicator are fiscal policy, Monitory Policy, Productivity, Monsoon and Stock market indices.

b).The coincidental indicator indicates the current condition of the economy. For example GNP, GDP, Industrial production and interest rate etc. shows the current developments of economy.

c).Lagging indicators is the charges that are taking place in leading and coincidental indicators are reflected in the lagging indicators. For example unemployment rate, inflation, and forex level are the outcome of leading and coincidental indicators. Lagging indicators provide an insight in to the economy is current and future position.

3. Diffusion Index.

The Diffusion Index is considered as a composite index and consensus index. The diffusion index includes the futures of leading indicators, coincidental indicator, and lagging indicator. Under diffusion index both micro as well as macro factors are analyzed. However this complex statistical method is very difficult to understand and apply.

4. Economic Model Building.

Under Economic Model Building technique of economic forecasting relationship between two variables are found to draw some conclusions so as to predict the future

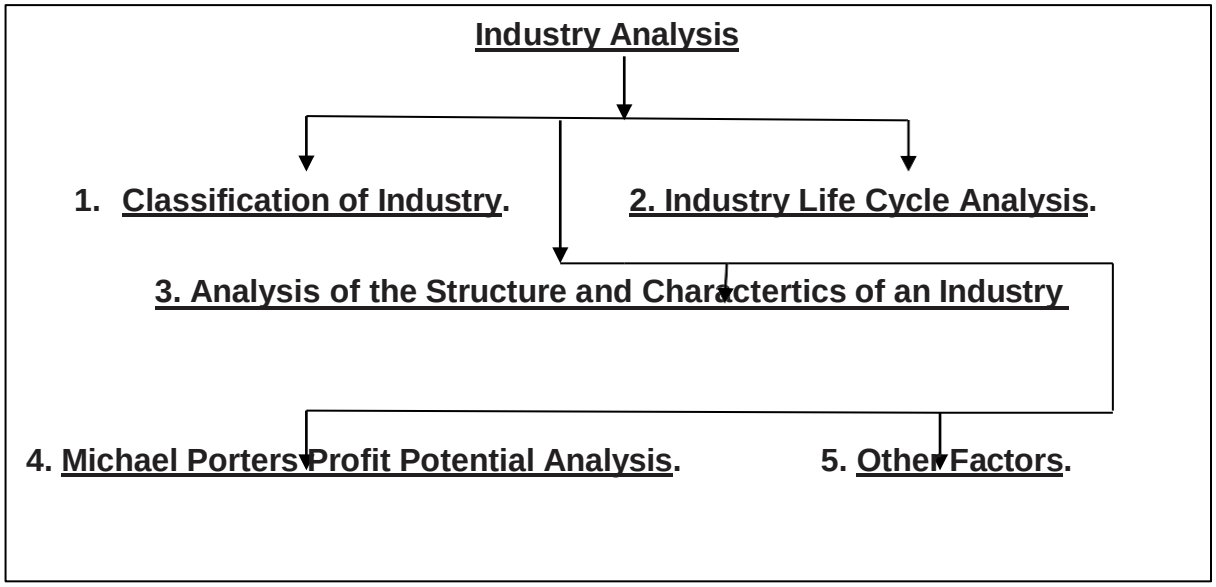
direction of the economy. One independent variable and dependent variable are taken and their relationship is measured. Like this many variables are compared to draw some meaningful inferences and to know to the future direction of the economy. However, to apply this model one has to have the computer, necessary software and accurate data.

5. **Opportunistic Model Building:** The Opportunistic Model Building is also known as sectoral analysis of Gross National Product Model Building and this is widely used economic forecasting technique. This method is based on the national accounting data and helps to find out the total income and total demand for various goods and services. The forecast is made for the Central Government Sectors, State Government Sectors, Private Sectors, and the Consumption Sector. The expenses and income of all the above sectors are carefully analyzed. This method is very reliable and highly flexible in forecasting the economic conditions and future directions.

3.6. INDUSTRY ANALYSIS.

Under fundamental analysis the next focus area is Industry Analysis. When the investor is ensured about the growth of economy he has to evaluate various industries and select the most promising industry for identifying investment opportunities. Industry analysis it indicates to an investor whether the industry is a growth industry or not. It gives an investor a choice of the industry in which the investments should be made or not.

Industry analysis, which refers to an evolution of the relative strengths and weakness of particular industries, can be divided into five categories of Industry analysis.



1. CLASSIFICATION OF INDUSTRY.

An industry means a group of firms doing similar business. An industry is a group of firms that have similar technological structure of production and produce similar products. Classification of industry further classified by Product and Business Cycle.

A). Classification by Product.

The companies in a particular industry are almost using similar materials, technology manpower skill and distribution system. They target the same customer segment. Following is the industry wise classification given by the Reserve Bank of India.

B). Classification According to Business Cycle.

Industries can also be classified on the basis of the business cycle or classified according to their reactions to the different phases of the Business Cycle.

a). Growth Industry.

b). Cyclical Industry.

c). Defensive Industry.

d). Cyclical Growth Industry.

a) Growth Industry.

The industry which is growing at faster rate is termed as growth industry. This industry is growing at high rate when compared to other industry and to certain extent

independent of the economy life cycle. In other words the growth industry growth rate is high when compared to the growth rate of economy and other sectors. For instance the Indian Software and Information technology enabled services industry and Infrastructure industry is considered as growth industry.

b) Cyclical Industry.

The Cyclical Industries' growth depends on the growth of economy. For example the consumer goods industry such as consumer white goods industry (colour television, washing machine, fridge etc.,) growth rate depends on the growth of general economic conditions such as Boom period and Depression period.

c) Defensive Industry

The Defensive industry to certain extend is independent from the ups and downs of the other sectors. For example the growth of industry which is producing consumer essential goods such as food, cloth and basic requirements of the consumer are steady always.

d) Cyclical Growth Industry

This is a new type of industry that is cyclical and at the same time growing. For example the automobile industry experience periods of stagnation and decline but they grow tremendously. The changes in technology and introduction of new models help the automobile industry to resume their growth path.

2. INDUSTRY LIFE CYCLE ANALYSIS.

Many industrialist economists believe that the development of almost every industry based four stages or every industry has to undergo various stages due to changes in technology, consumer behavior and innovations. The length of each and every stage may be different from Industry to industry. The cost, profitability and demand are influenced mainly by the stages of the industry life cycle.

a). **Pioneering Stage.**

b). Growth Stage.

c). Maturity and Stabilization Stage.

d). Decline Stage.

a). Pioneering Stage.

This is the first stage of the industry life cycle and at this stage a new product is introduced and the demand is created by educating the consumers about the product. The number of players at the stage is less and the sales are also less. No company can operate at its full capacity. The cost of production, marketing and distribution are very

high. Many companies enter into market and complete with each other vigorously. Large number of companies attempts to capture their share of the market. So at this stage weak firms are eliminated and survival for the few firms.

b). Growth Stage.

In this stage, these companies grow further and become a stronger. Each company finds a market for itself and develops its own strategies to sell and thereby maintain its position in the market. Improved products are brought out lower prices due to competition. Companies, which are in the expansion stage of an industry, are quite attractive for investment purpose. Investors can get high returns become demand exceeds supply.

c). Maturity and Stabilization Stage.

In this stage, the growth of the industry stabilizes sales increases at a slower rate, change in social habits and development of improved technology are the causes of such change. An investor should dispose of his holding in an industry, which begins to pass from the expansion stage to the stagnation stage. Otherwise, he will have to suffer loss.

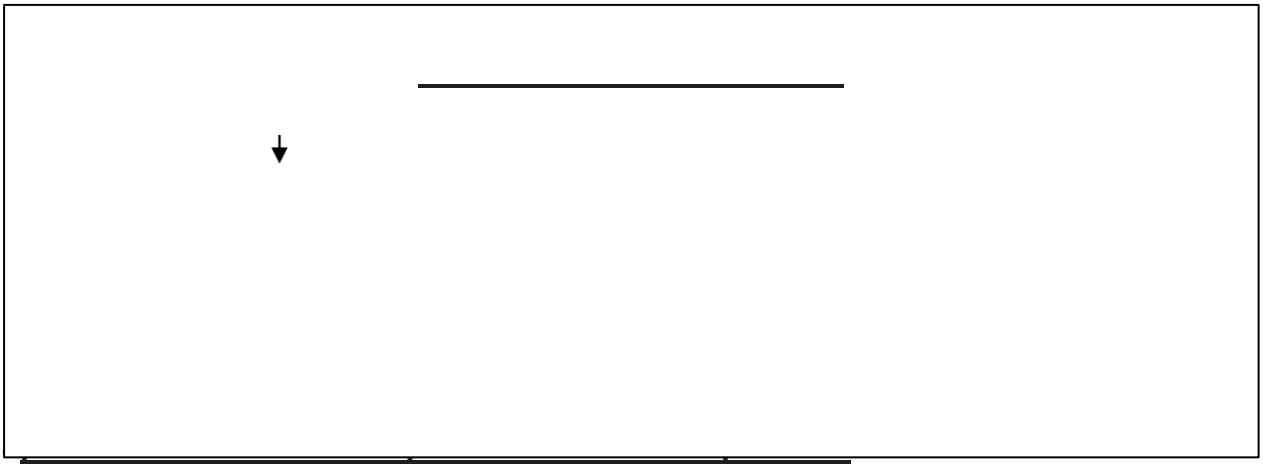
d). Decline Stage.

This is last life cycle of the industry and at this stage the demand for the product starts declining. Thus causes of declining stage may be changes in raw material, technology, consumer behavior or Government policy. Under declining stage the companies' production is declining whereas the cost is high and above all the profitability is severely affected and ultimately it results in loss. An investor should dispose of his holdings in such industry before the onset of the decay stage.

The industry life cycle approach provides a useful frame work for industry analysis by the investor. The life of an industry may extend after the stagnation and decay stage through appropriate adaptation to changes in the investment careful analysis is needed to detect such expectations

3. ANALYSIS OF THE STRUCTURE AND CHARACTERTICS OF AN INDUSTRY.

Since each industry is unique, a systematic study of its specific features and Charactertics must be an integral part of security analysis. Industry analysis should focus on the following structure and Charactertics of industry.



Analyzing the structure and Charactertics of an industry the following factors to be considered.

- ***The Number of firms in the industry and the market share of top few (four to five) firms in the industry.***
- ***Licensing policy of the government.***
- ***Entry barriers and pricing policy of the firm.***
- ***Degree of homogeneity or differentiation among products.***
- ***Competition from foreign firms.***
- ***Comparison of the products of the industry with substitutes in terms of quality, price, appeal and functional performance.***

b). Nature and Prospectus of Demand.

- ***Major customers and their requirements.***
- ***Key determinants demand.***
- ***Degree of cyclicality in demand.***
- ***Expected rate of growth in the foreseeable future.***

c). Cost, Efficiency and Profitability.

- ***Proportions of the key cost elements, namely, raw materials, labour , utilities and fuel.***
- ***Productivity of Lobour.***
- ***Turnover of inventory, receivables and fixed assets.***

- ***Control over prices of outputs and inputs.***
- ***Behaviors of prices of inputs and outputs in response to inflationary pressures.***
- ***Gross profit, Operating profit and net profit margins.***
- ***Return on assets, earning power and return on equity.***

D). Technology and Research.

- ***Degree of technological stability.***
- ***Important technological changes on the horizon and their implications.***
- ***Research and development outlays as a percentage of industry sales.***
- ***Proportion of sales growth attributable to new products***.

4. MICHAEL PORTERS PROFIT POTENTIAL ANALYSIS.

Michael Porters has argued that the profit potential of an industry depends on the following five forces.

Profit Potential of an Industry.

a). Threat of New Entrants.

B). Competition among Existing Firms.

C). Pressure from Substitute Products.

d). Bargaining Power of Buyers.

e). Bargaining Power of Sellers.

a). Threat of New Entrants.

Industry threat of new entrants is greater; its profit potential would be limited. In some industries, it may not be economical to set up small capacities. An industry, which is well protected from the entry of new firms, would be ideal for investment.

b). Competition among Existing Firms: Many firms are operating in an industry. They complete with each other on the basis of price, quality, promotion, service, warranties and so on. The rivalry in an industry is high when the following conditions prevail in the market:

- ***There are a large number of competitors in the industry.***
- ***There is a sustained competitive battle.***
- ***The level of fixed cost is high.***
- ***The industry growth is dull.***
- ***There is over capacity in the industry continuing for a long time.***

- ***The industries product is considered as a commodity, which stimulates strong competition.***

c). Pressure from Substitute Products.

Each firm in an industry faces competition from other firms in the same industry producing substitute products. Substitute products may affect the profit potential of the industry badly. The pressure from the substitute products is found to be high under following circumstances:

- ***When the price of product is attractive.***
- ***When the cost for the prospective buyers to switch over to a substitute product is minimum.***
- ***When the substitute products are earning greater profits***.

d). Bargaining Power of Buyers.

Buyers can bargain for price reduction, ask for better quality and better service. They may induce competition among competitors. They can even reduce the profitability of the supplier industry. The bargaining power of a buyer group is said to be high under the following conditions:

- ***If its capacity to buy is more than the capacity of the seller to sell.***
- ***If the cost of switch over to a substitute products is low.***
- ***If it poses a threat of backward integration strongly***.

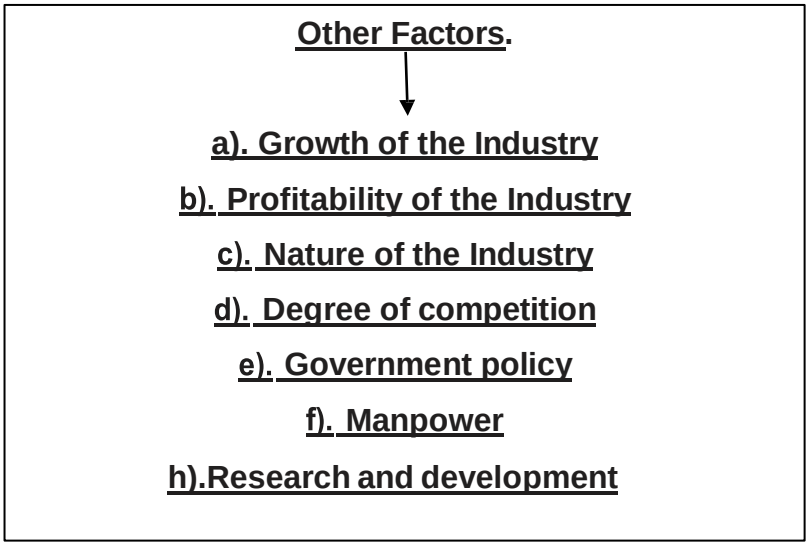
e). Bargaining Power of Sellers.

Sellers also can expect a competitive force in an industry and bargain for rise in lower quality, curtail some of the free services they offer etc. Powerful suppliers can affect the profitability of the buyer industry badly. Suppliers are said to be powerful under the following circumstance:

- ***Few suppliers dominate the entire market.***
- ***There is no viable substitute for the products supplied.***
- ***The switching poses a strong threat of forward integration.***
- ***Suppliers also pose a strong threat of forward integration.***

5. OTHER FACTORS.

The following are some of the factors that are to be analyzed as part of industry analysis;



a). Growth of the Industry.

The rate of growth in terms of sales and profitability is very important factor to be analyzed. The growth rate of industry has a significant impact on the profitability and growth rate of the companies in the industry.

b). Profitability of the Industry.

The profit margin of the industry determines the return available for investors. The asset structures (fixed and current assets) and the operating expenses influence the profitability.

c). Nature of the Industry.

The nature of the industry that is whether consumer goods, industrial goods, or service sector influences the profitability. If the particular industry directly depends on other industry

then that industry also should be analyzed. For example the demand for type industry depends on the growth of automobile industry.

d). Degree of competition.

The level of competition is an important factor to be analyzed for sound investment decision. If the competition level is very high the profit margin of this company will be very low. The growth prospects also will be very less.

e). Government policy

The Government policy over a particular industry determines the profitability. The Taxation policy, price control, environmental norms etc., affects directly the performance of the companies.

f). Manpower

The availability of skilled manpower and its cost structure are very important issues to be analyzed. When the required skilled manpower is available at reasonable cost then the cost of recruitment, training and development will be low. Otherwise the employee cost will be very high and in turn it will affect the profitability of the industry.

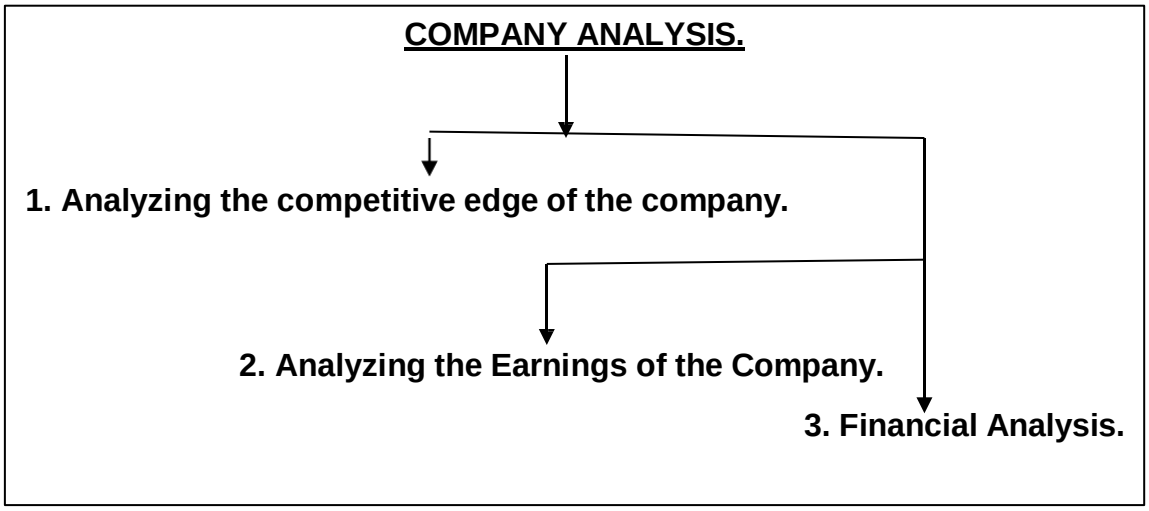
h).Research and development

The investment on Research and Development and the facilities available will help the Industry to achieve high growth rate.

3.7. COMPANY ANALYSIS.

The company analysis is the major part in fundamental analysis. For taking prudent investment decision, the investor has to analyze economic conditions and select the most Promising industry. However it doesn't mean that all the companies in the selected industry will be really growth oriented. Therefore it becomes necessary to identify the best company from the selected industry for investment. For this purpose the investor has to carefully analyze various important fundamental factor which influences the valuation and growth Prospects of the company.

Company analysis involves a close investigative scrutiny of the company's financial and non financial aspects with a view to identifying it strengths, weakness and future business prospects. The following factor to be evaluated by the analyst.



1. Analyzing the Competitive Edge of the Company.

Each and every company has its own competitive edge when compare to others. For example Unilever, Colgate Palmolive Ltd., and P&G are having lot of powerful brands in their product portfolio. This competitive edge helps the companies to retain and increase their customer base and market share. This competitive edge ensures stable earnings for the company.

The competitive edge of the company can be studied with the help of:

a). The Market Share.

b). Growth in sales.

c). Stability of Sales.

d). Sales Forecast.

a). The Market Share.

The market share enjoyed by a company facilitates strong earnings growth.

For example

Tata motor's significant market share in automobile industry enables the company to have consistent profitability. When a company has high market share in its product it acts as price dictation. It dominates in various marketing activities. This dominant certainly guarantee high profit margin.

b). Growth in sales.

The Growth of the sales of the company should be steadily increasing, so that it's financial results really improves. The growth of sale indicates the increasing market share, increasing number of loyal customers. Such growth results in optimum utilization of the resources of the company.

c). Stability of Sales.

If a firm has stable sales revenue, other things remaining constant, will have more stable earnings and it ensures constant dividend for equity shareholders.

d). Sales Forecast.

A company may be in a superior position commanding more sales both in monetary terms and physical term but the investor should have an idea whether it will continue in the future or not. For this purpose, forecast of sales has to be done and it used some forecasting methods such as: Trend line, Simple Least square methods,

demand for substitute and complementary products and sales growth can be compared with macro economic variables like GDP, per capital income etc.

2. Analyzing the Earnings of the Company.

Sales alone do not increase the earnings but the cost and expenses of the company also influence the earnings of the company. Earnings do not always increase with the increase in sales. The company's sales might have increased but its earnings per share may decline due to rise in costs. Sometimes, the volume of sales may decline but the earrings may improve due to rise in the unit price of the product. Hence, the investor should not depend only on the sales, but should analyze the earnings of the company.

The investor has to predict the future earnings of the company, so as to know the returns on his investment. The cost structure changes in sale and provisions etc. will influence the profitability. To predict earnings in the following factors should be carefully analyzed

a) The cost and sales

The cost structure that is the proposition of variable cost and fixed cost and the pattern of sales affects the profitability of the company. When the fixed cost proportion is very high the company can earn more profit by increasing volume. Therefore growth in sale under the circumstances will yield maximum benefit to the company.

b) Depreciation

The provision for depreciation and other reserve determine the profitability of the company. If the company follows a conservative approach then the amount of depreciation and other reserve will be very high and leaves share holders with very less cash dividend. From such companies the shareholders can get only less immediate return. However the book value of the share may increase and in turn the market value of the equity shares gets increased. If the company changes the method depreciation it will have an impact on the profitability.

c). Depletion of resources

If the company is in oil, mining, gas and forest based business the depletion of such natural resources will pull down the profitability of the company. Therefore the resources available and the rate of depletion will give a hint about the future profitability of the company.

d). Employee cost

If the company is in manpower intensive industry and if the manpower cost is increasing then the future profitability of the business is doubtful. For example there is a

consistent increasing employees cost in Indian IT Sectors and the profit margin is affected.

e). Currency Value

If the company is in export or import business the currency value against overseas currencies determine the profitability. For instance for the last one year the Indian currency appreciate against U.S $ benefiting the importers and affecting the exporters. Therefore the trends of currency value can give better idea about the future profit margin of the companies.

f). Capital Structure

The capital structure that is the source of long term capital employed by a company influences the ultimate profit available for the equity share holders. By employing debt capital the company can reduce the cost of capital since the payment of interest is made before payment of corporate tax and results in tax savings. Above all the company promises to pay interest to the debenture holders irrespective of the profitability of the company Thus the debenture holders are on safer side and they expects only a reasonable interest. Thus the after tax cost of debt capital is always less. So the capital structure indicates in future returns available for the equity share holders.

g). Efficiency of management

If the board of directors consists of highly experienced, efficient and dedicated people then the company can be really successful. The efficiency of the management will be reflected in terms of; introduction of new products, financial discipline, good corporate governance and taking strategic decision.

3. Financial Analysis.

The investor has to go through the financial statements and analyze the profitability and financial position of the company. The various accounting policies and accounting standards adopted by the company for preparation of the financial statement should be understood so that the real financial health of the company is known. In this regards the following areas should be carefully analyzed.

1. Analysis of Financial Statement

The Trading, Profit and Loss account and Balance sheet are the basic financial statement of a company. The Trading, Profit and Loss account shows the results of one year business operation that is profit or loss. The Balance sheet shows the financial position of the company. Following are the techniques of financial statement analysis.

a). Comparative Financial Statement

The figures of financial statement for more than one period are presented in a table for analysis. The increase or decrease of various items such as expenses, income, liabilities and assets over two years period are calculated and shown in terms of actual amounts and percentage. Such analysis helps the investor which items is increasing or decreasing and the percentage of increase or decrease.

b). Common Size Statement

The common items in the financial statements are taken as hundreds and the rest of the items are converted as a percentage of the common item. For example in common size income statement the sale figure is taken as hundred and all the expenses are converted as a percentage of sales. Similarly in common size balance sheet the total liabilities are taken as hundred and all the liabilities are shown as a percentage of the total liabilities. When come to assets side of the balance sheet the total asset is taken as hundred and all the assets are converted as percentage of total assets. This exercise simplifies lengthy accounting figures and facilitates easy and quick understanding of the importance of each and every accounting figure.

c). Trend Analysis

The Trend analysis considers more than two years figures. For example a company's five years balance sheet can be shown in the form of table by taking the first year figure as base data. The base data is taken as hundred and the subsequent years figures are converted as a percentage of the based data. This Trend Analysis helps to understand the movement of the trend of the profitability and the financial position of the company.

d). Funds Flow and Cash Flow Analysis

The funds flow and cash flow analysis shows the various sources of funds and applications of funds of a company. It shows changes in the financial condition of the company over two years period. This statement also shows funds earned from core business or funds lost in the core business. The Cash flow statement shows the route causes of changes in cash position over two years period.

e). Ratio Analysis

Ratio is a relationship between two accounting figures expressed mathematically. Calculating ratio and analyzing the same will give a better picture about the turn over efficiency, profitability and financial position of a company. There are many ratios but the ratios under the following classifications will be immense useful to the investors.

1. Liquidity Ratios: a). Current Ration. B). Quick Ratio.

2. Leverage Ratios: a). Debt – Equity Ratio. B). Property Ratio.

c). Interest Coverage Ratio.

3. Profitability Ratios: a). Gross Profit Ratio. b). Operating Profit Ratio.

c). Net Profit Ratio.

4. Activity Ratios: a). Debtors Turnover Ratio. b). Creditors Turnover Ratio.

c). Stock Turnover Ratio. d). Current Asset Turnover Ratio.

3.8. TECHNICAL ANALYSIS

The fundamental analysis focus on the analysis of the economy, industry and company for investment decisions. The decisions are based on fundamental facts but the fundamental analysis ignores the importance of market timings ie…entry and exit timings. The technical analysis focus on the price movements and volume so as to give signals to the investor to identify the right entry and exit timings.

The shares and securities price movements are analyzed broadly by two key approaches, namely Fundamental approach and Technical approach. The Fundamental approach emphasis much on the growth prospects of economy, stability of government, the prospects of the specific industry and the specific company where as the technical approach emphasis much on the price and volume movement of the stock. Based on the price and volume movements of stock the buying and selling decisions are taken.

The technical approach is the oldest approach to equity investment, dating back to the late 19th century. The Technical analysis continues to flourish in modern times as well. It is widely used by institutional investors, operators and a large number of retail investors. In fact the investor analyses both fundamentals and technical so that he can buy the right Stock at right time.

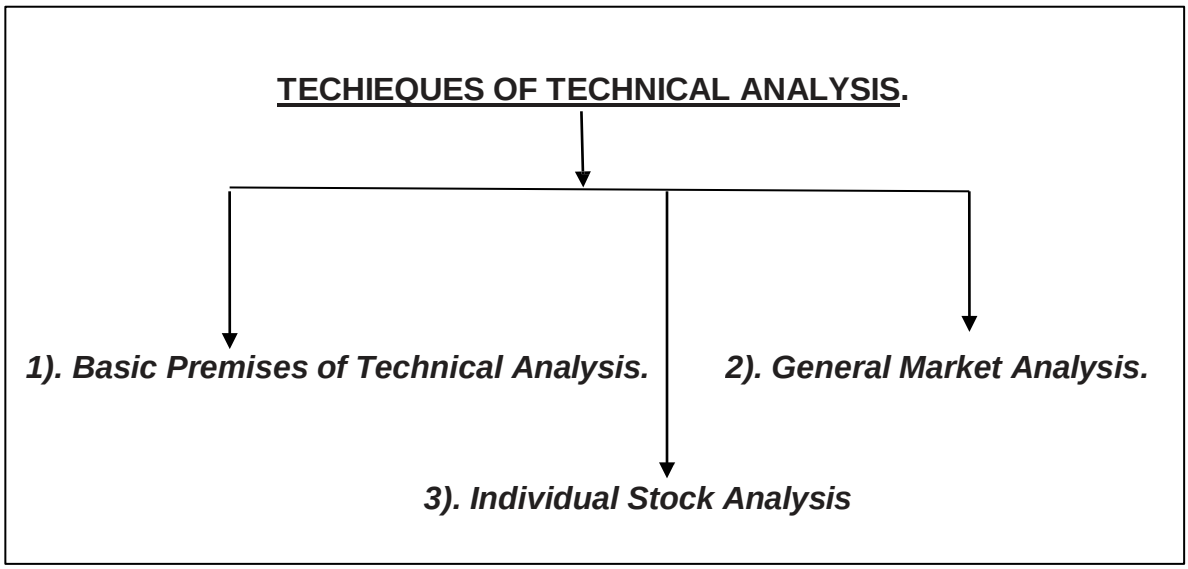
The Technical approach to investing is essentially a reflection of the idea that prices move in trends, which are determined by the changing attitudes of investors towards a verity of economic, monetary, political and psychological forces. *The Technical analysis helps the investor to identify the trend reversals at an earlier stage to formulate the buying and selling strategy and any corrections made on the existing investment avenue.*

3.9. TECHNICAL ANALYSIS – MEANING

The technical analyst believes that the market is in a trend and they try to predict the trend well in advance so that the investor can take buying and selling decisions at appropriate timings. With the help of several indicators the analyze the relationship between Price – Volume and supply demand for the overall market and their individual stock. They examine these, patterns with the help of charts and graphs and predict whether prices are moving higher or lower and even by how much.

3.10 TOOLS / TECHNIQUES USED FOR TECHNICAL ANALYSIS.

The following important tools are used for technical analysis for predicting the price movement of overall market.



3.10.1. BASIC PREMISES OF TECHNICAL ANALYSIS / ASSUMPTIONS OF TECHNICAL ANALYSIS.

Before, we embark on the actual methods themselves; let us review the basic and necessary assumptions regarding the technical analysis.

a) The market price of a stock is basically determined by the demand and supply forces.

b) Various rational and irrational factors influence the demand and supply of stocks.

c) The market discounts everything. The good news and bad news will cause the Shift in demand and supply forces.

d) Stock prices tend to move in fairly persistent trends.

e) Changes in demand and supply bring out changes in trends.

f) Shifty in demand and supply can be detected with help of charts as to market action.

g) The technical analyst analyze the past price behavior of the market / stock to Predict the future trend.

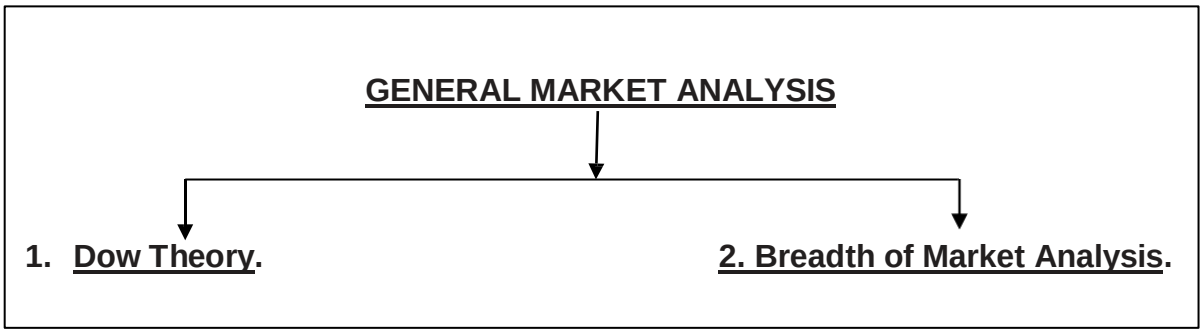
3.10.2. FUNDAMENTAL ANALYSIS VS TECHNICAL ANALYSIS.

There are two primary schools of thought regarding security analysis –fundamental and technical analysis. Fundamental analysis utilizes a much wider range of information than does technical analysis and relies on traditional financial statement analysis. Technical analysis, on the other hand, concerns itself with attempting to identify patterns in past price movements. Both consider macro economic trends to differing degrees, but emphasize the use of firm specific microeconomic data. Basically, technical analysis and fundamental analysis aim at good return on selected investment.

FUNDAMENTAL ANAYLSIS	TECHNICAL ANALYSIS
a). The fundamental analysis is based on Analysis of information relating to the economy, industry and company.	The technical analysis is based on analysis of price movements and the volume or internal market data.
b). The Fundamental analysis helps the investor to find out the intrinsic value of the stock	The technical analysis helps to predict the trend of price movements.
c). The fundamental analysis uses the accounting tools like Ratio, fund flow and cash flow analysis.	The technical analysis used tools like technical indications and charting methods.
d). The fundamental analysis mainly focuses on long term investments prospectus.	The technical analysis mainly focuses on the short term investment prospects
e). The fundamental analysis is mainly used by long term investors.	The technical analysis is mainly used by speculators.
f). The fundamental analysis not used any assumptions to find out the intrinsic value of the stock.	The technical analysis used by many assumptions to predict the trend of predicts movements.
h). The fundamental analysis considers economic factors, population and natural resources etc.	The technical analysis considers the factors like price of securities, its demand and supply and return on investment.

3.10.3. General Market Analysis.

Out of variety of tools employed by technical analysis to assess the overall market movement, the two important tools are:



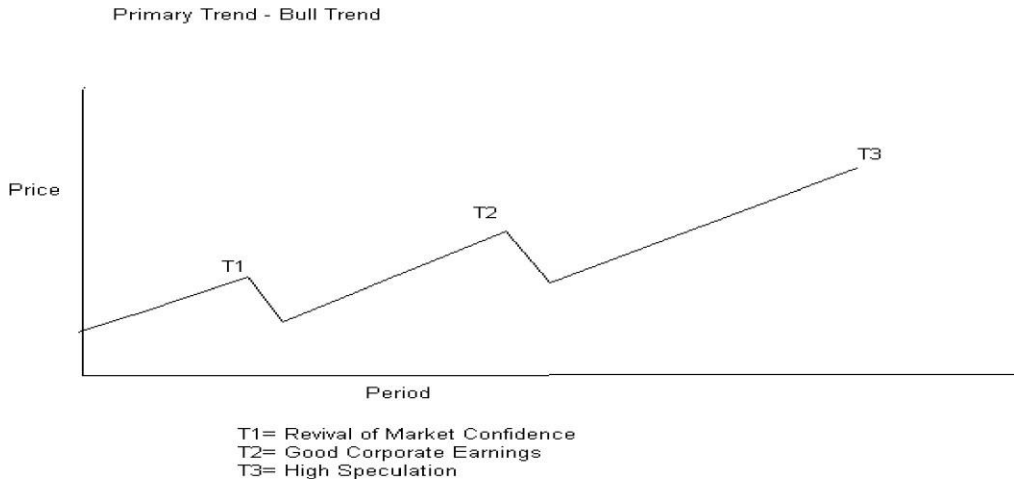
1. Dow Theory.

- Dow Theory developed by Charles H. Dow.
- Generally Stock Performance is Classified in two Categories:
  a).Bullish Trend.

A). Bullish Trend.

Bull market has three phases. In the first phase, the prices would advance with the revival of confidence in the future of business. This will encourage investors to buy share of companies. During the second phase, price would advance due the improvements in corporate earnings. In the third phase, prices advance due to inflation and speculation. The following chart shows the three phases of bullish market.

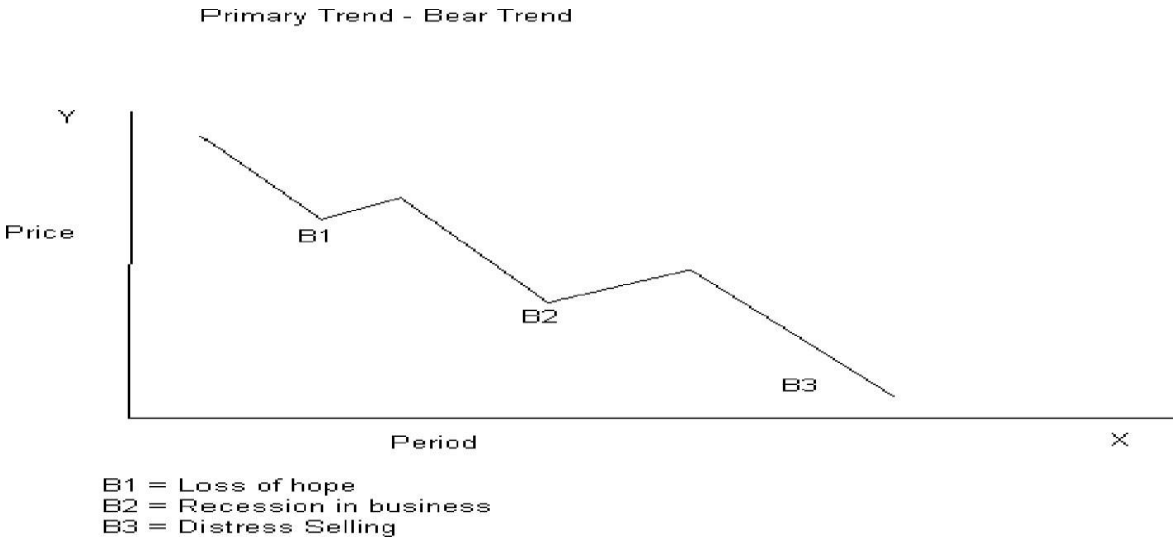
Phases of Bullish / Bull Market:



b). Bearish Trend.

The bear market also has three phases. In the first phase, prices begin to fall due to abandonment of hops. Investors begin to sell their shares. In the second phase, companies start reporting lower profits and lower dividends. In the third phase, prices fall still further due to distress selling. The following chart shows the phases of Bearish:

Phases of Bearish Trend:



- Stock market movement is classified in the following trends:

a). Primary Market Trend.

The primary market trend, which can often last a year or more.

b). Secondary or Intermediate Trend.

Secondary or intermediate trend, which can move against the primary trend for one to several months.

c). Minor Trend.

Minor movements lasting only for hours to a few days. The determination of the market trend is the most important decision to the Dow believer.

- Stock prices demonstrate patterns over four to five years.

The Dow Theory asserts that stock prices demonstrate patterns over four to five years and these patterns are mirrored by indices of stock prices. *The Dow Theory employs two Jones Averages.*

a). Industrial Average.

b). Transportation Average.

- If the Dow Jones *Industrial Average rises, the Transportation Average should also rise.* Such simultaneous price movements suggest a *strong bull market.*
- *Decline in both the Industrial Average and Transportation Average* suggests that the market is uncertain or *bearish trend market*.
- *If one of the averages starts to decline after a period of rising stock prices*, then the two are at odds. This suggests that the other average may not continue to rise but may soon start to fall. *Hence, the investor will use this signal to sell securities and convert them in to cash*.
- One of the averages start to rise while the other continues to fall the converse occurs, suggests that, *this phase is over and that security prices in general will soon start to rise.*

Dow theory, finally suggest that the, investor use this above signals of stock market movements and Dow Jones averages and made it quality decision regarding that buy and sale of securities.

2. Breadth of Market Analysis or Market Breadth.

The market breadth is an important technical indicator and widely used by technical Analyst to predict the future trend. *The market breadth is the difference between numbers of stocks advanced and number of stocks declined.*

If the day's closing price of a stock is more than the previous day's closing price then it is said to be advanced. If the day's closing price of a stock is less than the previous day's closing price then it is said to be declined. The cumulative index of net differences of number of stocks advanced and number of stocks declined measures the market breadth.

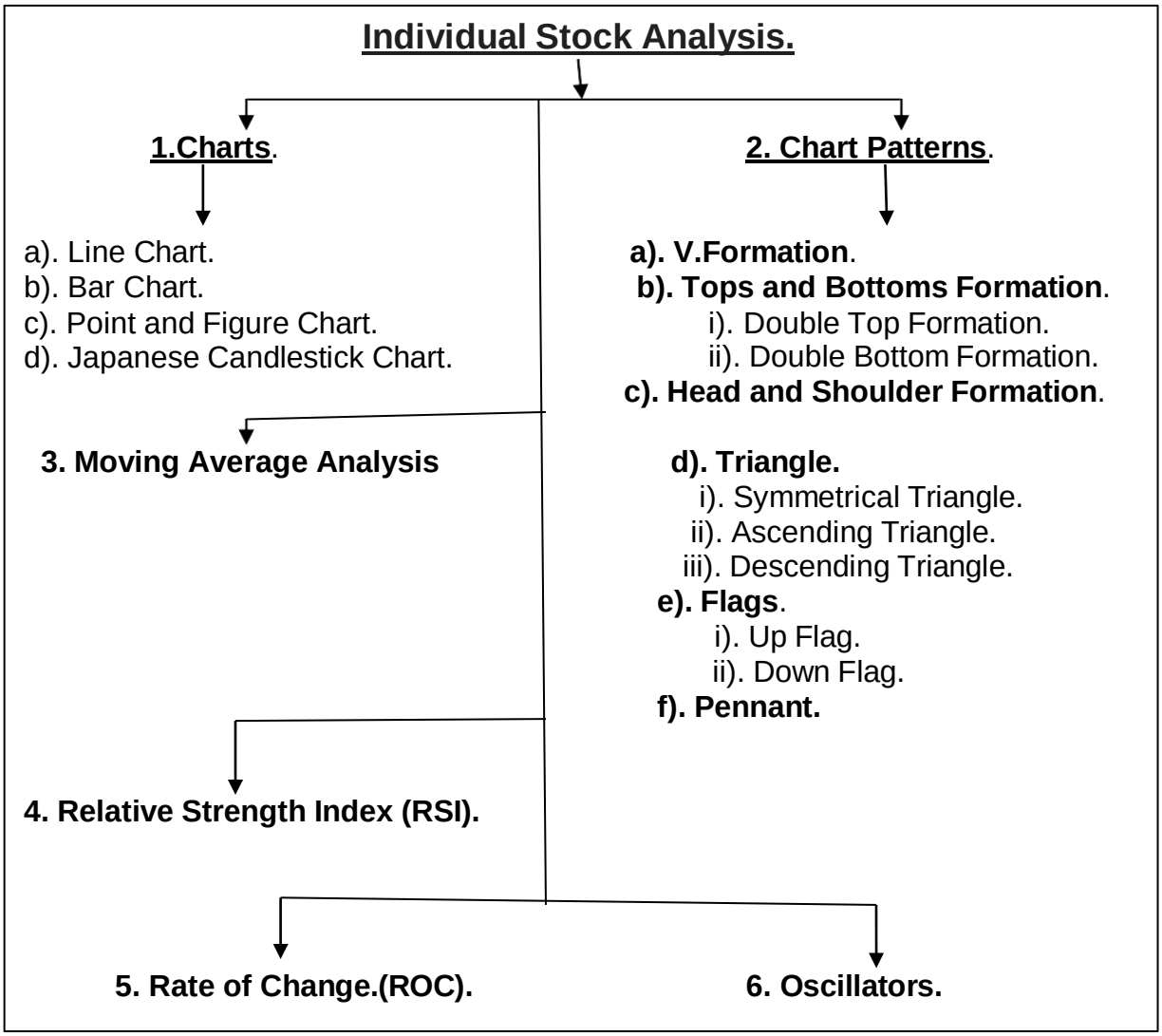
When the market breadth is positive and consistently increasing it indicates the bull market. Instead if the market breadth is reducing then it is the signal of bear market. The market breadth can be shown in the form of chart also.

Market Breadth or Breadth of Market Analysis.

Day	No. of Shares Advanced	No. of Shares Declined	Net difference	Breadth
1	1450	750	700	700
2	1300	900	400	1100
3	1150	1000	150	1250
4	950	1150	(-)200	950
5	800	1250	(-)450	500

3. Individual Stock Analysis.

Analyzing the individual stocks, the technical analysis primarily uses the following tools:

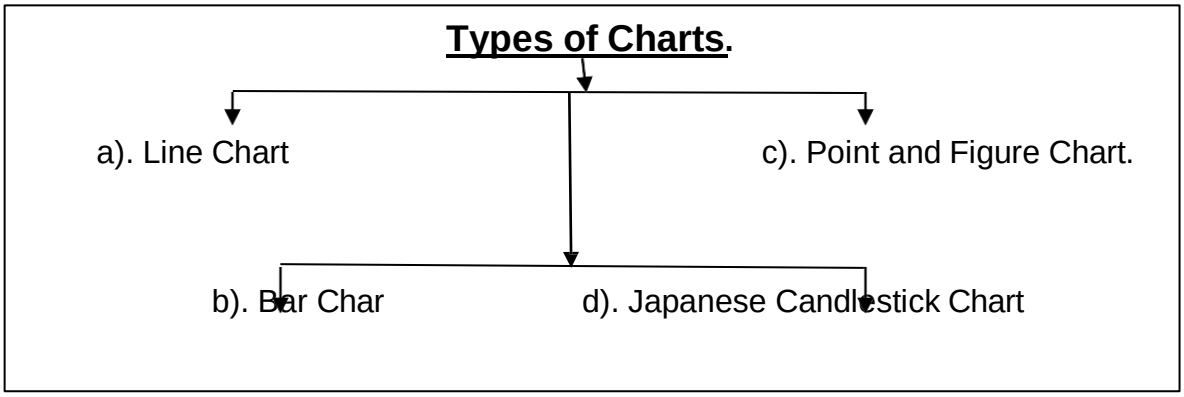


1. CHARTS.

Technical analysis uses charts as important tool to predict the future trend of share price movement. *The price movements of a stock presented in the form of charts enable investor to easily understand and predict the price movements. The graphical presentation helps the investor to understand the past and present price movements.* The charts indicate the main support and resistance levels of the stock.

Uses of Charts.

- Spots the current trend for buying and selling.
- Indicates the probable future action of the market by projection.
- Shows the past historic movement.
- Indicates the important areas of support and resistance.



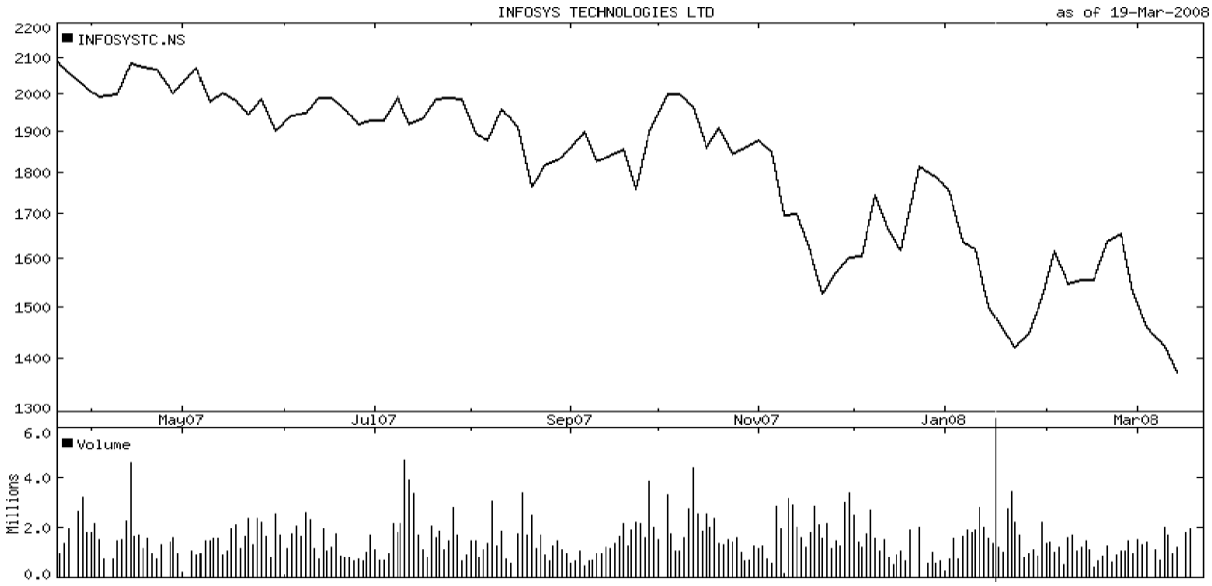
A). LINE CHART

The line chart is the simple presentation of price movement of a stock over a specified period. The period is represented by " X" axis and the price movement is represented by " Y" axis. The closing price of the stock for various period are plotted in the chart with dots and then all the dots are joined by a line and the line is called variable line.

Line charts can be prepared by considering daily closing price, weekly closing price or monthly closing price. To predict short term movements' daily closing price can be used to prepare line charts. To predict medium term and long term movements the weekly and monthly closing price can be considered. Traders in the stock market prepare intra – day line charts by considering every ten minutes / 1/2 hr price movements.

The line chart can be prepared for volume of a stock, index numbers or total volume of the stock exchange.

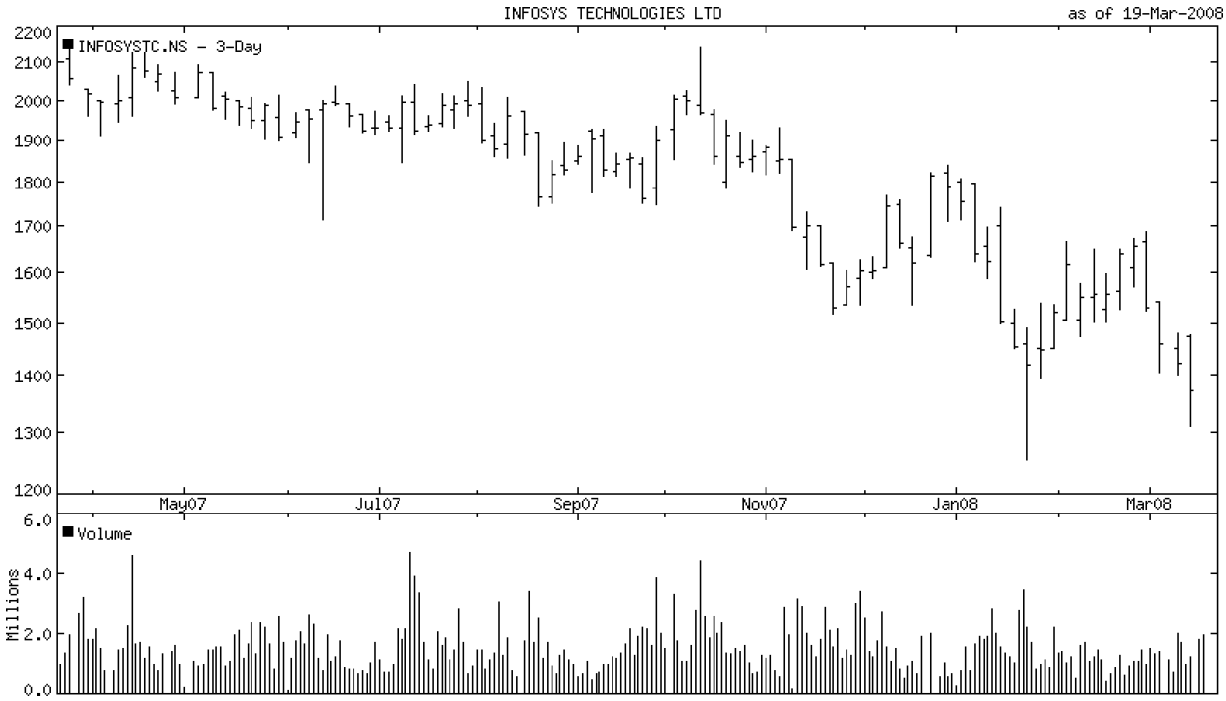
Line Chart.



B). BAR CHART

The bar chart is based on the statistical technique. The bar chart shows the complete Price movements of a stock. It reveals the day's opening price, low price, high price, closing price and the volume of a stock. The closing price and opening price are marked in between the high price and low price by marking a tick on the vertical bar. The volume of transactions is shown as separate vertical bars in the bottom portion of the bar chart.

Bar Chart

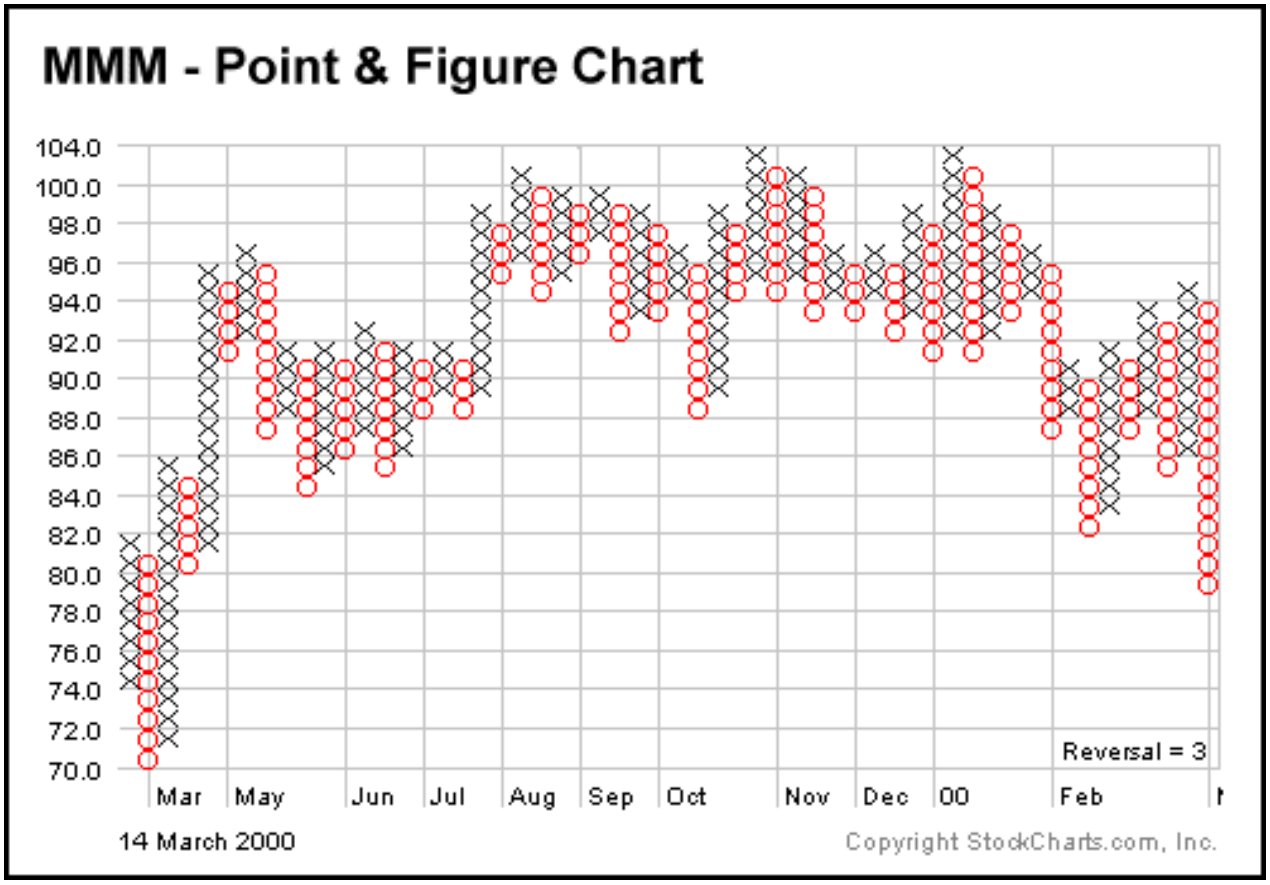


C). POINT AND FIGURE CHART.

The Point and figure chart is useful to predict the change of price direction. The point and figure chart is drawn on the ruled paper. The price interval of the stock is entered on the left side of the chart. For high priced scrip the price intervals are high and for less priced scrip e price intervals are less. When the price of the scrip moves up to the next price interval then it is marked up with “X” symbol and as long as the share price increases the “ X “ symbols are plotted in the vertical column. When the share price declines by the price intervals then the chart is plotted with “O” symbols in the next column. The price movements are analyzed and interpreted by reading the ‘X” and “O” symbols on the chart.

The point and figure chart have the price interval of Rs.3 whenever the price rises by Rs.3 then the chart is plotted “X” symbols vertically and when price declines by Rs.3 then the chart is plotted with “O” symbol in the next column. The point and figure chart shows the support and resistance levels and also indicates the buy and sells signals. However the point and figure chart fails to show the intra – day price movements and minor fluctuations below the selected price intervals. The chart does not show the volume which is very important aspect of technical analysis.

Point and Figure Chart.



D). JAPANESE CANDLE STICK CHART

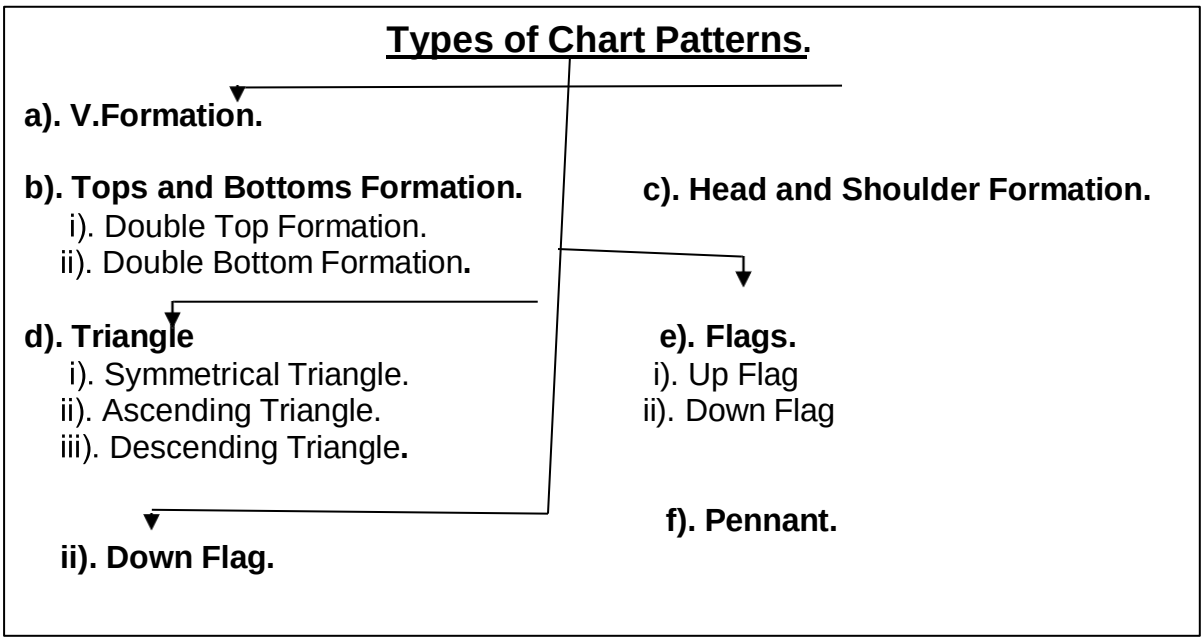
The candle stick chart shows the price movements of the stock in vertical form. The top and bottom points of the stock passes through the candle. A clear candle without any shading indicates increase in price and a shaded candle indicate decrease in price. When the day's closing price is higher than the opening price then it is considered as increase in price and the candle is kept clear.

When the day's closing price is less than the opening price it is considered as decrease in price and the candle is shaded. The candle stick chart shows the day's opening price, low Price, high price and closing price and the price movements. The candle stick charts can prepared for weekly or monthly.

Japanese Candle Stick Chart.

2. CHART PATTERNS.

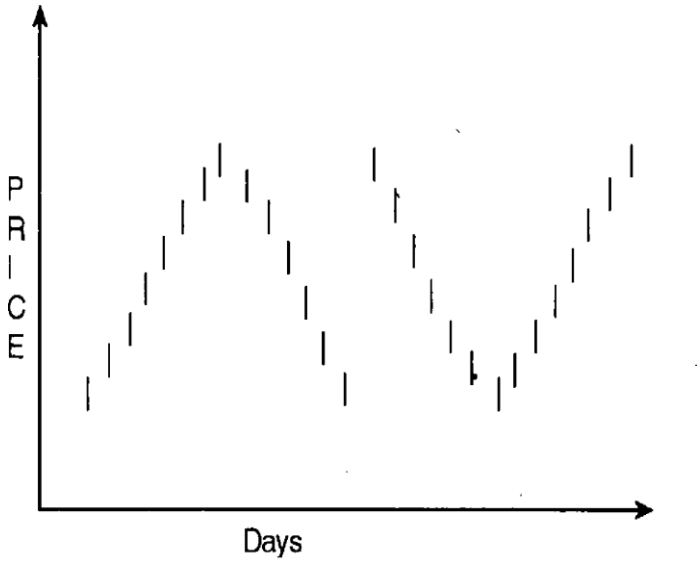
Chart reveals certain patterns that are of predictive value. *Chart patterns are used as a supplement to other information and confirmation of signals provided by trend lines*. Some of the most widely used and easily recognizable chart is given below:



a). V.Formation.

The name itself indicates that in the 'V' Formation there is a long share decline and a fast reversal. The 'V' pattern occurs mostly in popular stocks where the market interest changes quickly from hope to fear and vice – versa. In the case of inverted ' ' the rise occurs first and declines.

V – Shaped Reversal



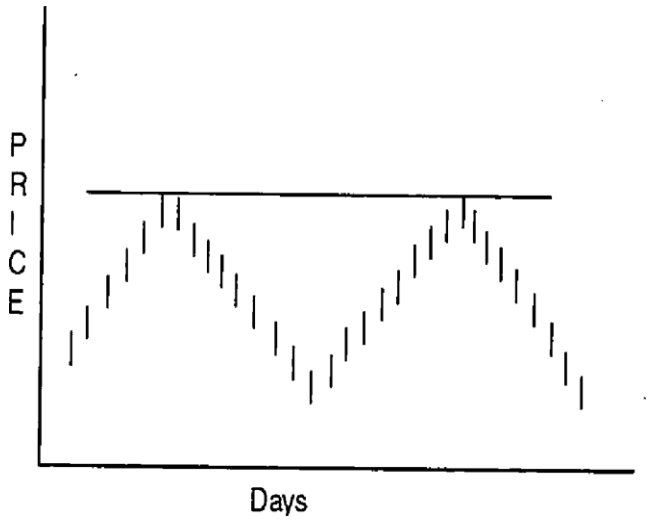
b). Tops and Bottoms Formation.

Top and bottom formation is interesting to watch but what is more important, is the middle portion of it. The investor has to buy after up trend has started and exist before the top is reached. Generally tops and bottoms are formed at the beginning or end of the new trends. The reversal from the tops and bottoms indicate sell and buy signals.

i). Double Top Formation.

It represents a bearish development, signaling that the price is expected to fall. Its pattern resembles the letter 'M'. The double top may indicate the onset of the bear market. But the results should be confirmed with volume and trend.

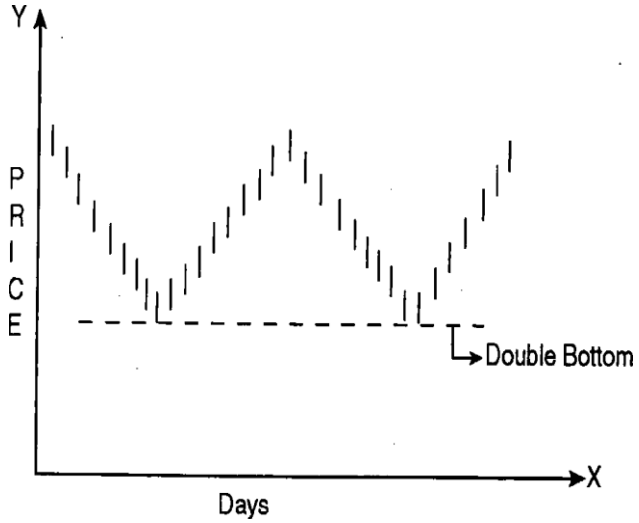
Double Top Formation.



ii). Double Bottom Formation.

In double bottom, the price of the stock falls to a certain level and increase with diminishing activity. Then it falls again to the same or to a lower price and turns up to a higher level. The double bottom resembles the letter 'W'. Technical analysts view double bottom as a sign for bull market.

Double Bottom Formation

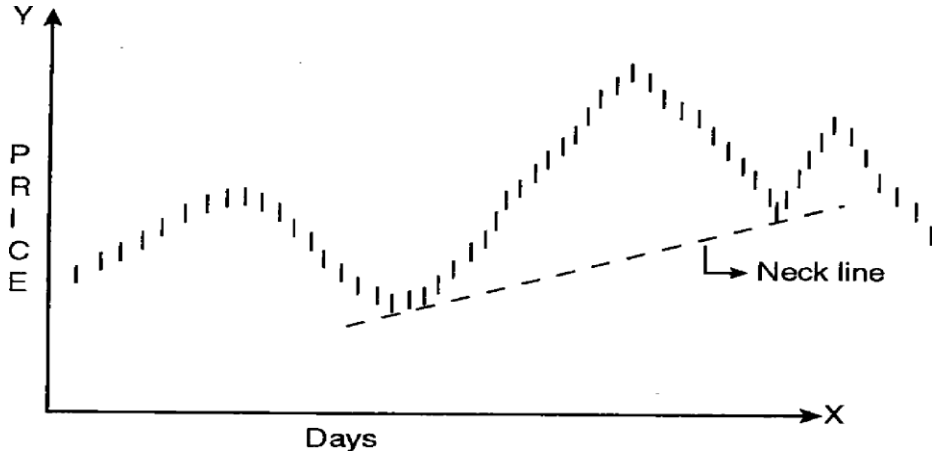


C). **Head and Shoulder Formation**.

The most popular reversal pattern is the head and shoulder formation. Head and Shoulder formation occurs at the end of a long up trend. it shows a top followed by a still higher top and then another lower top. Such a formation resembles the head and two shoulders of a man. So it is called as head and shoulder formation.

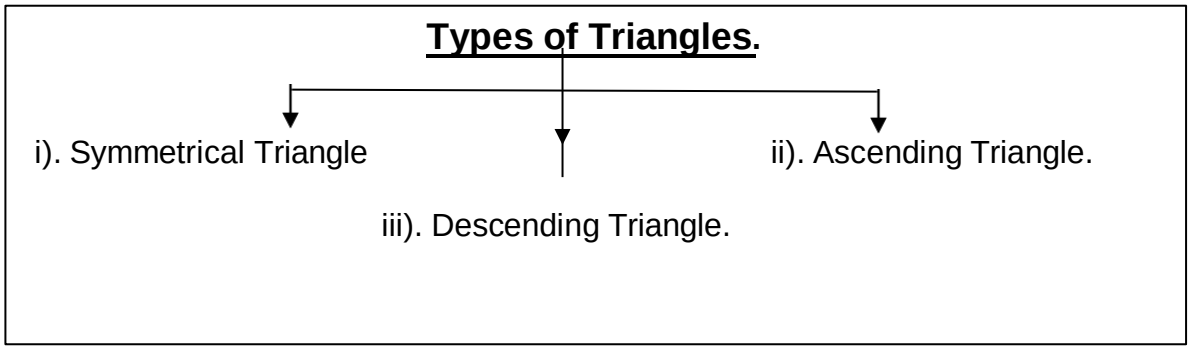
The first hup i.e. the left shoulder is formed when the prices reach the due to a strong buying impulse. Then there is a short downward suing due to the less volume of trade. The second top known as head is formed when the volume of trade increases still further. This is followed by less volume, which takes the price down to a bottom near to the earlist downward Suring. A third top i.e, right shoulder occurs taking the price to a height less then the head but equal to the left shoulder. A horizontal line joining the bottom of this formation is called neckline. Price penetrates this neck line. So the formation of the head and shoulder pattern is completed. After breading the neck line, the price is expected to decline sharply.

Head and Shoulder Formation.



d). Traingles.

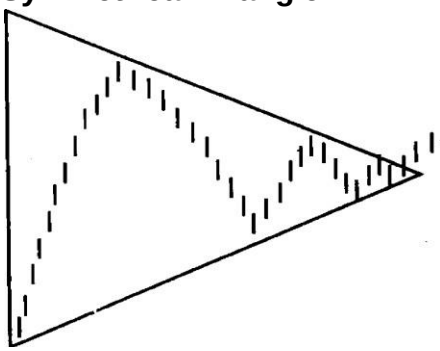
The triangle formation is easy to identify and popular in technical analysis.



i). Symmetrical Triangle.

The Pattern is made up of series of fluctuations, each fluctuations smaller than the previous one. Tops do not attain the height of the previous tops. Likewise bottoms are higher than the previous bottoms. Connecting the lower tops that are slanting downward forms a symmetrical triangle. Connecting the rising bottom, which is slanting upward, becomes the lower trend line. It is not easy to predict the breakaway either way. The symmetrical triangle does not have any bias towards the bull and bear operators. It indicates the slow down or temporary halt in the direction of the original trend.

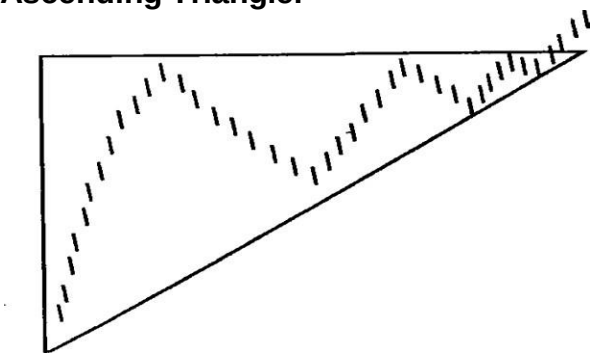
Symmetrical Triangle.



ii). **Ascending Triangle.**

Here, the upper trend line is almost a horizontal trend line connecting the tops and the lower trend line is a rising trend line connecting the rising bottoms. When the demand for the scrip overcomes the supply for it, then there will be a break out. The break will be in favour of the bullish trend. This pattern is generally spotted during an up move and the probability of the upward move is high here.

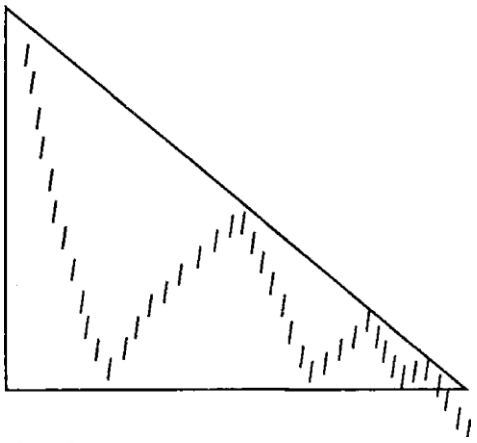
Ascending Triangle.



iii). Descending Triangle.

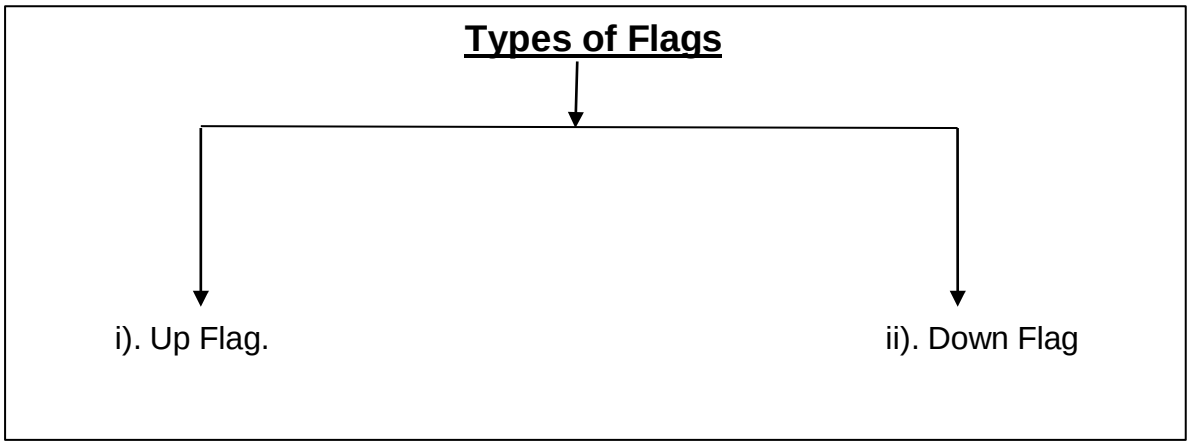
Here, connecting the lower tops forms the upper trend line. The upper trend line would be a falling one. The lower trend line would be almost horizontal connecting the bottoms. The lower line indicates the support level. The possibility for a downward breakout is high in the pattern. The pattern indicates that the bear operators are more powerful than the bull operators. This pattern is seen during the down trend.

Descending Triangle.



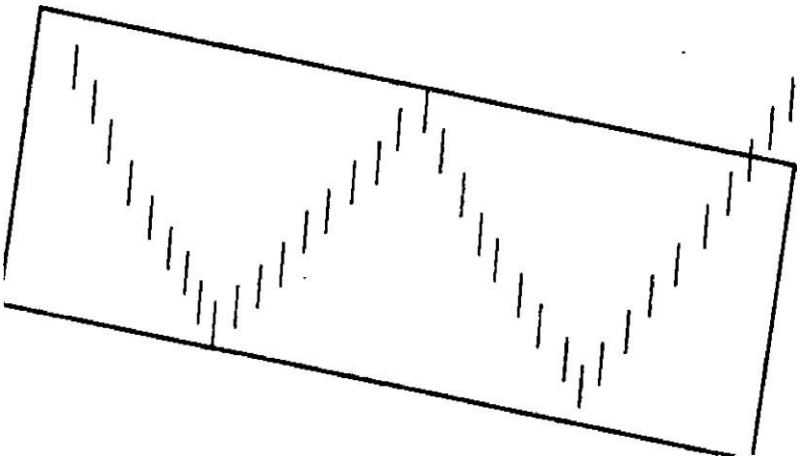
e). Flags.

Flag pattern is commonly seen on the price charts. These patterns emerge either before a fall or rise in the value of the scrip's. These patterns show the market corrections of the over bought or oversold situations. The time taken to form these patterns is quick. Each rally and set back may last only three to four days. If the pattern is wider it may take three weeks to complete the pattern.

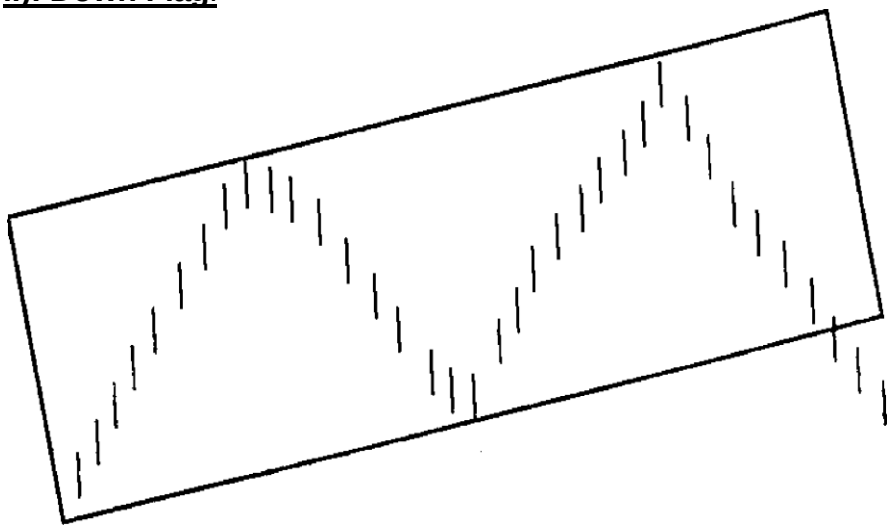


A flag resembles a parallelogram. A bullish flag is formed by two trend lines that stoop downwards. The bread-out would occur on the upper side of the trend line. In a bearish flag both the trend lines would be stooping upwards. The bread out in the downward trend line.

i).Up Flag



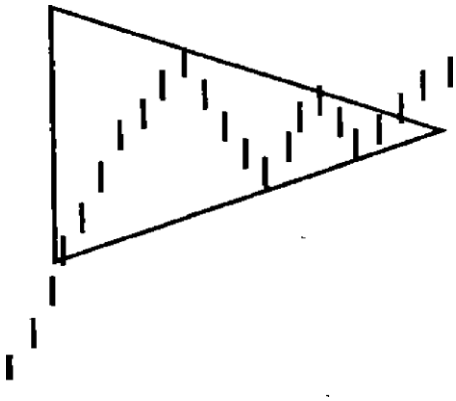
ii). Down Flag.



f). Pennant.

Pennant looks like a symmetrical triangle. Here also there is bullish and bearish pennant. In the bullish pennant, the lower tops from the upper trend line. The lower trend line connects the rising bottoms. The bullish trend occurs when the value of scrip moves above the upward trend line.

Pennant



3. Moving Average Analysis.

Technical Analysts are using indicators like Chart and Chart Patterns. *These indicators are used to predict the direction of the price movements of scrip and the direction of the market in future.*

The Moving averages are considered as most reliable and better indicator of the future direction. Most of Technical analysts use the Moving average since it is very simple and gives reliable signal about the forth coming bull / bear trend. The word moving means that the body of data moves ahead to include the recent observation. If it is 10 days Moving averages, on the 11th day the body of data moves to include the 11th day observation eliminating the first day's observation likewise it continues.

For the Moving average calculation the closing price of the stock is considered, because the day's closing price gives better indication about the next day's movements than the intra day's high low price. The Moving average can be calculated for the individual scripand for the Index and it indicates the underlying trend in the scrip (or) the market as the case may be. To predict short-term trend 10 – 30 days, to predict medium term, 50 – 125 days and to predict the long – term 200 days Moving averages can be applied.

USES OF MOVING AVERAGES

There are many advantages of Moving averages. It is possible to identify the trend and confirm the trend. There are three ways to identify the direction of the trend with Moving averages; ***i) direction, ii) location and iii) crossovers***.

The first trend identification techniques use the ***direction*** of the moving average to Determine the trend. If the Moving averages are rising, the trend is considered up. If the Moving average is declining, the trend is considered down.

The ***location*** of the price relative to the Moving average can be used to determine the Basic trend; if the price is above the Moving average the trend is considered up if the price is below the Moving average the trend is considered down.

The third technique for ***crossovers or trend identification*** is based on the location of the Short-term Moving average relative to the Long term Moving average and if it is above the Long-term Moving average the trend is considered up. If the Short term Moving average is below the Long-term Moving average then the Long term Moving average trend is considered down.

Another important use of Moving average is the identification of support and resistance levels**.** It helps the investor to find out the Support and Resistance Level for the market as well as for individual stock. Support and resistance level identification through Moving averages works best in trending market.

Types of Moving Average Analysis.

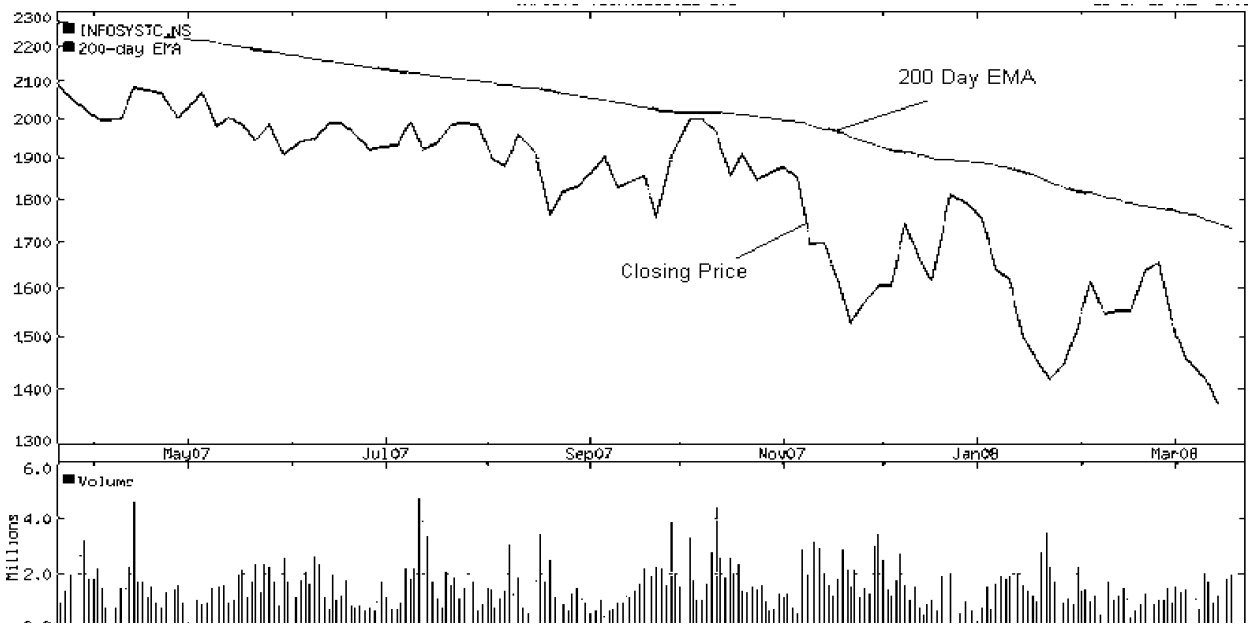
i). Index and Stock Price Moving Averages.

ii). Stock Price and Stock Prices Moving Average.

Eg: Calculation Of Five – Day Moving Average for Tata Motors.

Day	Price	Moving Average.
Feb 4, 2013	255	-
Feb 6, 2013	261	-
Feb 7, 2013	269	266.2
Feb 8, 2013	8273	270.8
Feb 9, 2013	273	272.8
Feb 11, 2013	278	273.8
Feb 12, 2013	271	274.0
Feb 13, 2013	271	273.8

Moving Average – 5 Days



i). Moving Average Convergence and Divergence (MACD)

MACD is another indicator used for disinvestment and investment process. It measures the convergence and divergence between two exponential or simple moving averages. Two series of closing price data – one for short term moving average of say 12 day and the other for 26 days of long-term moving average. The MACD should reflect the absolute differences between these two moving averages. With differences shown the Y-axis

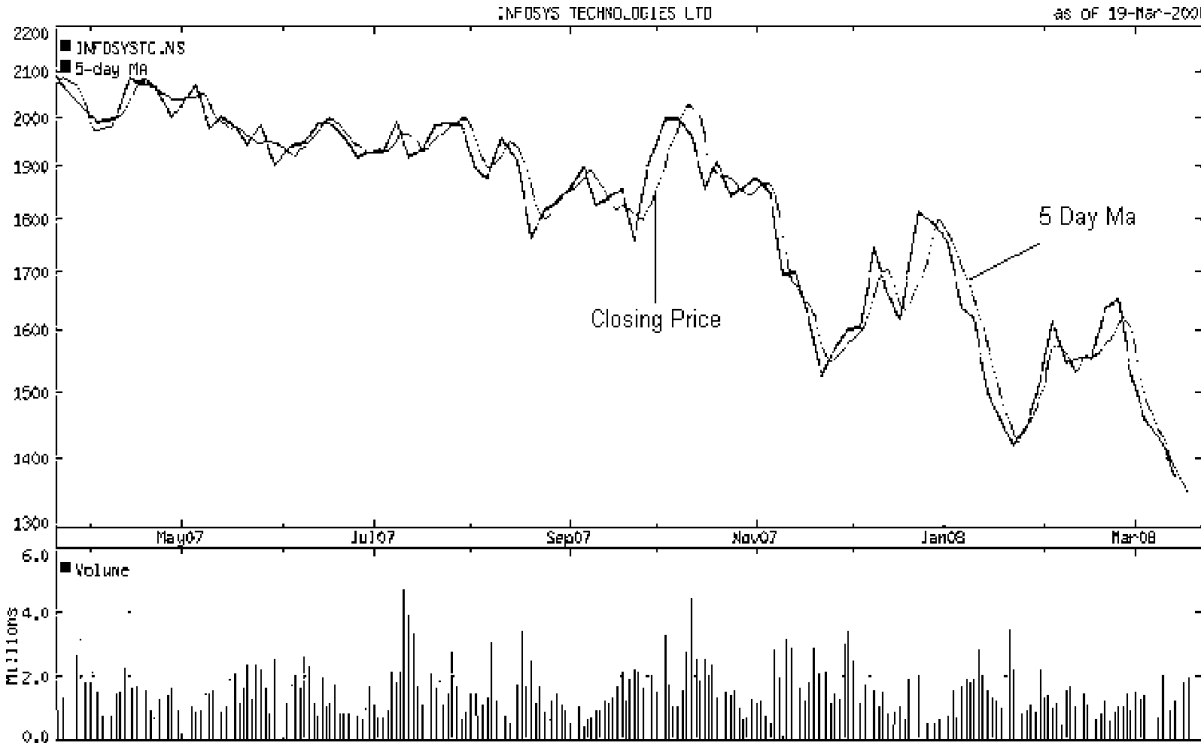
and days represented on the X-axis the chart can be drawn with a MACD line oscillating across the zero line.

As long as the MACD line moves above the zero line but likely to cross it, we have to select a point for disinvestment. Care has to be taken to see that some false signals are not pursued, but disinvestment may be based on some confirmation of likely trend to cross the zero line from above. This means that the short-term moving average is above the longer one, and the MACD is positive and in the opposite case, it is negative and falls below the zero line. This is seen from the above chart of MACD.

One can see many sell signals in the above chart, namely, A, B, C and D but after D the line started falling continuously and crossed the zero line and thus the point of 'D' is the last chance for disinvestment with advantage. If the market is in the overbought zone one can sell but not in the cover sold zone. A daily chart prices will first give preliminary indications, which are to be confirmed by the oscillators or the MACD lines. Even with

confirmation, one cannot be certain that the disinvestment has taken place at the right time. Experimentation and research through stimulation is the only guide to expertise and experience in the field of technical analysis to act as an aid for disinvestment management.

Moving Average Convergence and Divergence (MACD)



ii). Exponential Moving Average (EMA)

A type of moving average that is similar to a simple moving average, except that more Weight is given to the latest data. Also known as "exponentially weighted moving average This type of moving average reacts faster to recent price changes than a simple moving average. The 12- and 26-day EMAs are the most popular short-term averages, and they are used to create indicators like the moving average convergence divergence (MACD) and the percentage price oscillator (PPO). In general, the 50- and 200-day EMAs are used as signals of long-term trends

Exponential Moving Average Calculation

Parameters: n - number of days

$$EMA = Close\ \frac{2}{n+1} + \frac{\sum_{i=1}^{n} Close_i}{n}\left(100 - \frac{2}{n+1}\right)$$

Note:

Exponential moving average is related to simple moving average. In other words it is a weighted simple moving average putting more weight on the today's closing price. It may be measured in percentage, which is the percentage that is applied to today's closing price weighting yesterdays simple moving average. The formula to convert exponential percentage into simple moving average number of span days is as following:

$$Exp\_Percentage = \frac{2}{number\_of\_days + 1}$$

For example, let's say you were calculating a 10-day exponential moving average. To the previous exponential moving average figure you would add the weighting of 2 / (10 + 1), or 2/11, or .1818 times the current closing price. If you were working with a 20-day moving average, then the calculation would be 2/21 or .095 times the current close added to the previous exponential moving average. The longer the period for which you calculate the moving average, the less of an impact the exponential weighting has on the most recent data.

Moving averages are lagging indicators, and therefore, by definition, will give late signals. By weighting recent price data more heavily, exponential moving averages attempt to speed up the signal given. The disadvantage of doing this, of course, is that this more rapid signal can sometimes be premature and therefore give the swing trader a false indication to trade.

1. Relative Strength Index or Relative Strength Analysis (RSI).

The Relative Strength Index was developed by ells wilder. The RSI is used to find out the relative strength of a stock.

The Relative Strength analysis based on the assumption that prices of some securities rise reputedly during the Bull phase but fall slowly during the Bear phase in relation to the market as a whole. But differently such securities possess grater relative strength and hence outperform the market.

RSI is calculated with the help of the following formula;

$$RSI = 100 - \frac{100}{1 + Rs}$$

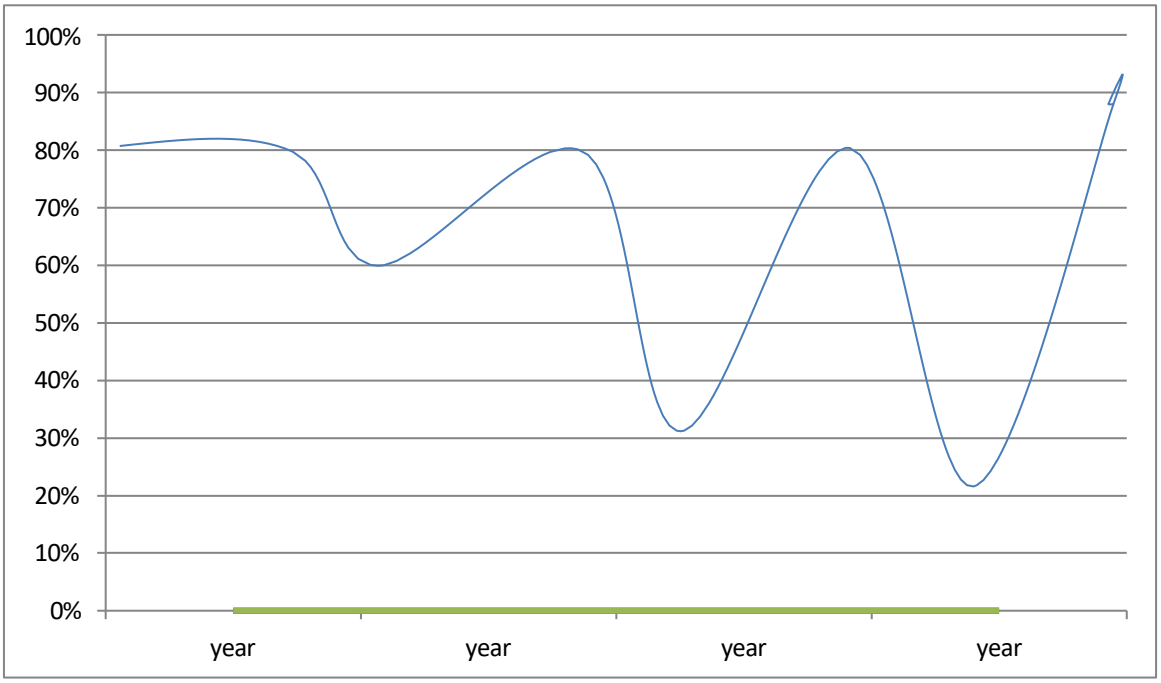
$$Rs = \frac{\text{Average Gain per day}}{\text{Average loss per day}}$$

The RSI can be calculated for one week or two weeks. If it is calculated for two Weeks period the probability of getting wrong indications is minimum.

Relative Strength Index.

Days	Price	Gain	Loss
1	100	----	---
2	110	10	---
3	115	5	---
4	120	5	---
5	125	5	---
6	120	---	5
7	115	---	5
8	120	5	---
9	126	6	--
10	131	---	5
		36 / 6 = 6	15 / 3 = 5

Relative Strength Index or Relative Strength Analysis (RSI).

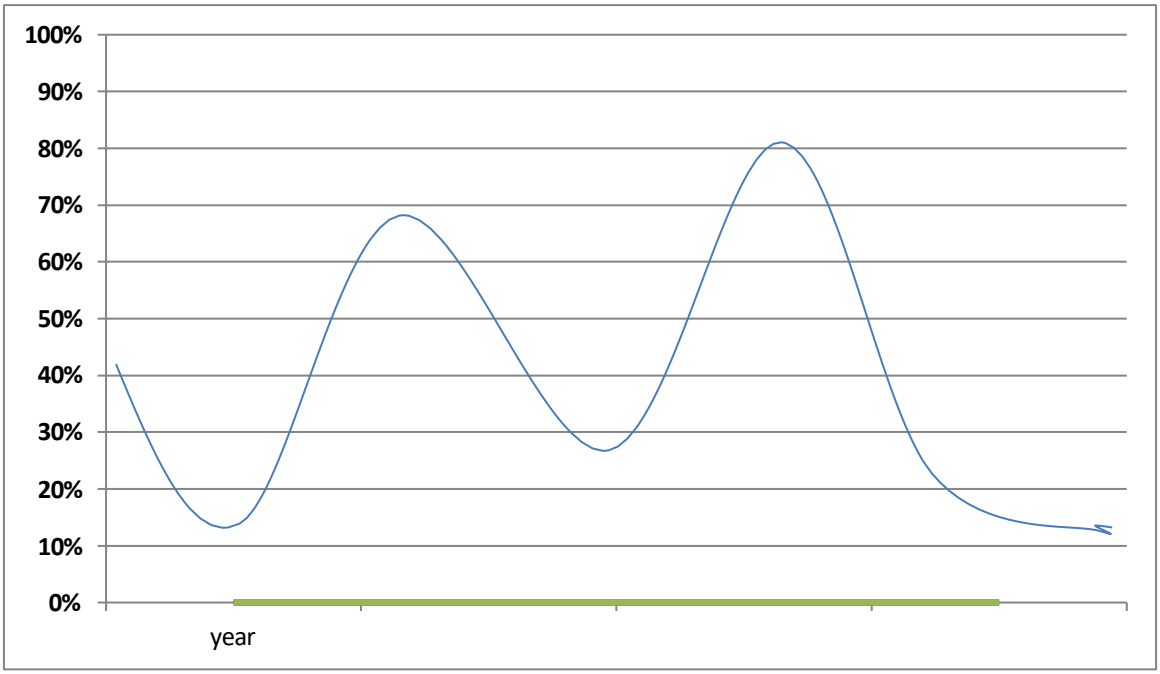


4. Rate of Change (ROC).

The Rate of Change (ROC) indicates the rate of change in price of a stock between two periods. *The ROC shows the change between the current price and the price "n" number of days in the past. The ROC indicates the overbought and oversold positions of a stock. The ROC also shows the trend reversals. ROC can be calculated by considering the closing price and it can be prepared weeks or months.* ROC can be calculated by using the following formula:

$$ROC = \frac{\text{Today's price}}{\text{Price 'n' days back}} \times 100$$

The ROC can be calculated and shown in a chart form.



5. Oscillators

Oscillators are widely used by technical analyst to know the overbought and oversold Positions of a particular scrip or market. *The oscillators show the trend reversal and the rise or decline in the momentum. The Oscillators shows the share price movements across a reference point from one extreme to another extreme.*

The Oscillators are indicators that we use when viewing charts that are no trending. Moving averages and trends are paramount when studying the direction of an issue. A technician will use oscillators when the charts are not showing a definite trend in either direction. Oscillators are thus most beneficial when a company's stock either is in a horizontal or sideways trading pattern, or has not been able to establish a definite trend in a choppy market.

When the stock is in either an overbought or oversold situation, the true value of the oscillator is exposed. With oscillators a chartist can see when the stock is running out of steam on the upside, the point at which the stock moves into an overbought situation. This simply means that the buying volume has been diminishing for a number of trading days; traders will then start to think about selling their shares. Conversely, when an issue has been sold by a greater number of investors for a period of time (from one to two weeks to three to six months or longer), the stock will enter an oversold situation.

3.11 QUESTIONS FOR DISCUSSION

1. Explain in detail about Economic Analysis.
2. Explain in detail about Industry Analysis.
3. Explain in detail about Company Analysis.
4. Explain in detail about various ratios are used analysis of the Company financial performance.
5. Explain in detail about various techniques used in Technical Analysis.
6. Discuss in detail about Assumptions of Technical analysis.
7. Explain in detail about Dow Theory.
8. "Chart patterns are helpful in predicting the Stock Price Movement" – Comment.
9. What are the different types of charts used by the Security Analysis?
10. Explain the techniques of Moving Average Analysis?

UNIT III – Fundamental and Technical Analysis

5-Mark Questions

S. No	Questions	Bloom's Level
1	Define fundamental analysis.	Remembering
2	Explain economic analysis.	Understanding
3	Define technical analysis.	Remembering
4	What are support and resistance levels?	Understanding
5	Explain simple moving average.	Applying

8-Mark Questions

S. No	Questions	Bloom's Level
1	Analyze the process of fundamental analysis.	Analyzing
2	Evaluate the assumptions of technical analysis.	Evaluating
3	Differentiate between fundamental and technical analysis.	Analyzing
4	Discuss Dow Theory and its implications.	Understanding
5	Examine indicators like RSI and Bollinger Bands.	Applying

UNIT – IV

EFFICIENT MARKET HYPOTHESIS

4.1 Efficient Market Hypothesis

The efficient market hypothesis emphasizes that it would be difficult for an investor to regularly beat the market which reveals the combined decision of lots of participants in an atmosphere regarded as by many contending investors who have similar objectives and access to the same information. An efficient market is the market which is actually capable of swiftly taking inane kind of new information or any fact or data relating to the economy, an industry or it may be relating to the company and then such information is precisely impounded in the price of the securities.

According to Fama (1970), efficient markets are those markets where “there are large numbers of rational profit maximizes actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants”.

In this type of markets participants cannot expect to earn any more than a fair return for the risks undertaken. In an efficient market it is assumed that as and when any information comes to the knowledge of investors it will be quickly and accurately assessed by the combined actions of millions of investors and thus will be immediately reflected in the price of the stock.

For example suppose a company announces an increase in their annual profit. Now this information will be quickly assessed by the investors. The ultimate effect of this efficiency is that whether an investor buys this particular company’s shares before, after or during the time when such announcement regarding company’s profit were made or whether another stock is purchased, only a fair market rate of return can be expected on these shares which will be enough to match with the risk of buying or holding such company’s security.

Also for example if a mutual fund companies manager can increase the fund’s return after transaction cost then Efficient market hypothesis asserts that the cost of transaction will become equal to the advantage gained by such transaction and research cost. Therefore no one in the market can outperform or earn better results of investing than others.

4.2 Assumptions of an Efficient Market

The efficient market hypothesis is based on certain assumptions. The following are the main assumptions for a market to be efficient:

- There are large numbers of buyers or investors for the security
- There are large numbers of sellers for the security
- These large number of investors trade in securities for profit.
- All investors act rationally.
- If some investors are not rational then they cancel the irrational behavior of each other.
- New information comes to the market randomly. This information is costless and available to all the market participants.
- Prices of securities adjust quickly to the newly available information.
- Stock prices should reflect all the available information.

4.3 Forms of Efficient Market Hypothesis

Efficient market is the one which promises only fair return to the investors. But in no case we meant that the efficient market doesn't give any return. It only states that the returns to an investor from investing in any type of securities in a market which is highly competitive will be fair on an average.

Eugene Fama classified the market into three categories on the basis of the kind of information that is available to the investors in a market. There can be three sets of information that can be available to investors and market participants. These are as follows:

- Information about past prices of the securities.
- Information that is made available to public at large likes announcements by company about its financial result etc.
- Information that is not available to public at large i.e. .insider information.

On the basis of the availability of this information or the basis of absorption of such information in the market the markets can be classified into three forms of efficiency. The following are the three forms of efficiency given by efficient market hypothesis:

1. **Weak form of efficiency**
2. **Semi strong form of efficiency**
3. **Strong form of efficiency**.

1. Weak form of efficiency

In this form of market only one set of information that is information about historical prices of shares is publicly available. It is asserted that in this form of market it is assumed that any movement in future prices of shares cannot be predicted from the previous prices of shares. Any development or changes in price is referred as random walk. In short this weak form of efficiency says that future prices of shares cannot be predicted from the past prices of shares.

2. Semi strong form of efficiency

In this form of efficient market hypothesis it is assumed that a market is efficient if all the relevant and openly or publicly available information is swiftly reflected in the market price of the securities. This is called the semi-strong form of the efficient market hypothesis. In semi strong form of market securities prices are assumed to be fully reflecting the all the publicly available information.

In this form of market prices of securities not only reflect the information relating to past price behavior or data but also the information relating to the profits made by the company, any announcement relating to the dividends paid or to be paid by the company, any information relating to the issue of bonus shares or the right shares by the company, any information regarding the merger of the company, acquisition or amalgamation of the company, the financial situation of company's competitors, expectation regarding various economic factors such as inflation employment etc.

In this form of market a few investors might earn profit in the short run due to availability of insider information to them. Semi strong form of efficiency of a market is quite easy to understand and interpret. It says that the market will speedily digest the publication of all the relevant new information by causing the prices of a share to move to a new equilibrium level. Whenever any new information reaches the public they react to it causing a change in demand and supply of shares.

3. Strong form of efficiency

The strong form of market efficiency states that the stock prices integrate all sort of information that is obtainable about the stock including the public as well as private information. So, if a market is strong form efficient, then even the traders with insider information cannot take advantage of their information to make more profits than other investors with no private information in the stock market. As in this form of efficient market share prices all kinds of information whether public or private or some insider information so no investor gets a chance to earn any kind of excess returns. In such a form of market

there are no legal barriers for the private information becoming public news. All kinds of insider information are reflected very quickly in the share prices.

So here we have learnt about the three forms of market but what the market efficiency hypothesis implies is that securities prices should be reflecting the proper indication about its fair value because it has already incorporated all available information. In spite of that it does not mean that an investor's preferences about the choice of securities are totally irrelevant in making their investment decision. An investor's choice about a security may be affected by many reasons. It may be about someone's family issue, the age at which he is trading, the risk preference of individual, beliefs of an individual investor etc. Thus, everyone has a need to optimize their portfolio so that they can be successful in reaching their objectives.

4.4 Markowitz Risk-return Optimization

Dr. Harry Markowitz is credited with developing the first modern portfolio analysis model since the basic elements of modern portfolio theory emanate from a series of propositions concerning rational investor behaviour set forth by Markowitz, then of the Rand Corporation, in 1952, and later in a more complete monograph sponsored by the Cowles Foundation. It was this work that has attracted everyone's perspective regarding portfolio management. Markowitz used mathematical programming and statistical analysis in order to arrange for the optimum allocation of assets within portfolio. To reach this objective, Markowitz generated portfolios within a reward-risk context.

In other words, he considered the variance in the expected returns from investments and their relationship to each other in constructing portfolios. In so directing the focus, Markowitz, and others following the same reasoning, recognized the function of portfolio management as one of composition, and not individual security selection – as it is more commonly practiced. Decisions as to individual security additions to and deletions from an existing portfolio are then predicated on the effect such a manoeuvre has on the delicate diversification balance. In essence, Markowtiz's model is a theoretical framework for the analysis of risk return choices. Decisions are based on the *concept of efficient portfolios.*

A portfolio is efficient when it is expected to yield the highest return for the level of risk accepted or, alternatively, the smallest portfolio risk for a specified level of expected return. To build an efficient portfolio an expected return level is chosen, and assets are substituted until the portfolio combination with the smallest variance at return level is

found. As this process is repeated for other expected returns, a set of efficient portfolios is generated.

Assumptions

The Markowitz model is based on several assumptions regarding investor behaviour.

1. Investors consider each investment alternative as being represented by a probability distribution of expected returns over some holding period.
2. Investors maximize one period's expected utility and progress along the utility curve, which demonstrates diminishing marginal utility of wealth.
3. Individuals estimate risk on the basis of the variability of expected returns.
4. Investors base decisions solely on expected returns and variance (or standard deviation) of returns only.
5. For a given risk level, investors prefer high returns to lower returns. Similarly, for a given level of expected return, investor prefer less risk to more risk.

4.5 CAPITAL ASSET PRICING MODEL (CAPM)

William F. Sharpe and John Linter developed the Capital Asset Pricing Model (CAPM). The model is based on the portfolio theory developed by Harry Markowitz. The model emphasises the risk factor in portfolio theory is a combination of two risks, systematic risk and unsystematic risk. The model suggests that a security's return is directly related to its systematic risk, which cannot be neutralised through diversification. The combination of both types of risks stated above provides the total risk. The total variance of returns is equal to market related variance plus company's specific variance. CAPM explains the behaviour of security prices and provides a mechanism whereby investors could assess the impact of a proposed security investment on the overall portfolio risk and return.

CAPM suggests that the prices of securities are determined in such a way that the risk premium or excess returns are proportional to systematic risk, which is indicated by the beta coefficient. The model is used for analysing the risk-return implications of holding securities. CAPM refers to the manner in which securities are valued in line with their anticipated risks and returns. A risk-averse investor prefers to invest in risk-free securities.

For a small investor having few securities in his portfolio, the risk is greater. To reduce the unsystematic risk, he must build up well-diversified securities in his portfolio. The asset return depends on the amount for the asset today. The price paid must ensure

that the market portfolio's risk/return characteristics improve when the asset is added to it. The CAPM is a model, which derives the theoretical required return (i.e. discount rate) for an asset in a market, given the risk-free rate available to investors and the risk of the market as a whole.

The CAPM is usually expressed:

$$E(Ri) = Rf + bi(E(Rm) – Rf)$$

b (Beta), is the measure of asset sensitivity to a movement in the overall market; Beta is usually found via regression on historical data. Betas exceeding one signify more than average "riskiness"; betas below one indicate lower than average.

E(Rm) – (Rf) is the market premium, the historically observed excess return of the market over the risk-free rate. Once the expected return, E(ri), is calculated using CAPM, the future cash flows of the asset can be discounted to their present value using this rate to establish the correct price for the asset. (*Here again, the theory accepts in its assumptions that a parameter based on past data can be combined with a future expectation.*) A more risky stock will have a higher beta and will be discounted at a higher rate; less sensitive stocks will have lower betas and be discounted at a lower rate. In theory, an asset is correctly priced when its observed price is the same as its value calculated using the CAPM derived discount rate. If the observed price is higher than the valuation, then the asset is overvalued; it is undervalued for a too low price.

Assumptions to Capital Asset Pricing Model

Because the CAPM is a theory, we must assume for argument that:

1. All assets in the world are traded.
2. All assets are infinitely divisible.
3. All investors in the world collectively hold all assets.
4. For every borrower, there is a lender.
5. There is a riskless security in the world.
6. All investors borrow and lend at the riskless rate.
7. Everyone agrees on the inputs to the Mean-STD picture.
8. Preferences are well described by simple utility functions.
9. Security distributions are normal, or at least well described by two parameters.
10. There are only two periods of time in our world.

This is a long list of requirements, and together they describe the capitalist's ideal world. Everything may be bought and sold in perfectly liquid fractional amounts even human capital! There is a perfect, safe haven for risk-averse investors i.e. the riskless

asset. This means that everyone is an equally good credit risk! No one has any informational advantage in the CAPM world.

4.6. QUESTIONS FOR DISCUSSION

1. Explain in detail about Efficient Market Hypothesis.
2. Describe in detail about Markowitz model approach.
3. Explain in detail about Arbitrage Pricing Theory.
4. Enumerate the Capital Asset Pricing Model.

UNIT IV – Efficient Market Hypothesis

5-Mark Questions

S. No	Questions	Bloom's Level
1	Define Efficient Market Hypothesis (EMH).	Remembering
2	Explain Markowitz model.	Understanding
3	Define Arbitrage Pricing Theory (APT).	Remembering
4	What is CAPM?	Understanding
5	Explain Sharpe Single Index Model.	Applying

8-Mark Questions

S. No	Questions	Bloom's Level
1	Analyze different forms of EMH.	Analyzing
2	Evaluate Markowitz portfolio theory.	Evaluating
3	Discuss Arbitrage Pricing Theory in detail.	Understanding
4	Examine CAPM and its assumptions.	Analyzing
5	Explain Sharpe's Single Index Model for portfolio selection.	Applying

UNIT – V

PORTFOLIO PERFORMANCE EVALUATION

5.1 Portfolio Management

Portfolio Management is defined as the art and science of making decisions about the investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing risk against performance. It is mainly concerned with allocating assets while downsizing risk.

"Never put all your eggs in one basket" is what is meant by diversification. Instead of investing all funds in one asset, the funds be invested in a group of assets.Diversification helps in reducing the risk of investing. Total risk of one investment is the sum of the impact of all the factors that might affect the return from that investment. However, investors need not suffer risk inherent with individual investments as it could be reduced by holding a diversity of investments.

For example, return from a single investment in a cold drink company is subject to weather conditions. This investment is a risky investment. However, if a second investment can be made in an umbrella company, which is also subject to weather changes, but in an opposite way, the return from the portfolio of two investments will have a reduced risk-level. This process is known as diversification. Portfolio is the combination of securities or diversified investment in securities.

Portfolio management may be defined as the process of construction, maintenance, revision and evaluation of a portfolio. The objective of portfolio management is to build a portfolio which gives a return commensurate with the risk preference of the investor.

Portfolio management specifically deals with security analysis, analysis and selection of portfolio, revision of portfolio and evaluation of portfolio.

5.2 Objectives of Portfolio Management

a). Capital appreciation

b). Maximizing returns on investment

c). To improve the overall proficiency of the portfolio

d). Risk optimization

e). Allocating resources optimally

f) .Ensuring flexibility of portfolio

g). Protecting earnings against market risks.

5.3 Types of Portfolio Management

1. Active portfolio management

In this type of management, the portfolio manager is mostly concerned with generating maximum returns. Resultantly, they put a significant share of resources in the trading of securities. Typically, they purchase stocks when they are undervalued and sell them off when their value increases

2. Passive portfolio management

This particular type of portfolio management is concerned with a fixed profile that aligns perfectly with the current market trends. The managers are more likely to invest in index funds with slow but steady returns which may seem profitable in the long run.

3. Discretionary portfolio management

In this particular management type, the portfolio managers are entrusted with the authority to invest as per their discretion on investors' behalf. Based on investors' goals and risk appetite, the manager may choose whichever investment strategy they deem suitable.

4. Non-discretionary management

Under this management, the managers provide advice on investment choices. It is up to investors whether to accept the advice or reject it. Financial experts often recommended investors to weigh in the merit of professional portfolio managers' advice before disregarding them entirely.

5.4 Portfolio Management Process

Typically, professionals use these following ways to manage investment portfolio –

1. Asset allocation

Essentially, it is the process wherein investors put money in both volatile and non-volatile assets in such a way that helps generate substantial returns at minimum risk. Financial experts suggest that asset allocation must be aligned as per investor's financial goals and risk appetite.

2. Diversification

The said method ensures that an investors' portfolio is well-balanced and diversified across different investment avenues. On doing so, investors can revamp their collection significantly by achieving a perfect blend of risk and reward. This, in turn, helps to cushion risks and generates risk-adjusted returns over time.

3. Rebalancing

Rebalancing is considered essential for improving the profit-generating aspect of an investment portfolio. It helps investors to rebalance the ratio of portfolio components to yield higher returns at minimal loss. Financial experts suggest rebalancing an investment portfolio regularly to align it with the prevailing market and requirements. Once investors have selected a suitable strategy, they must follow a thorough process to implement the same so that they can improve the portfolio's profitability to a great extent.

5.5. Determinants of Portfolio Performance

Performance of the portfolio depends on certain critical decisions taken by a portfolio manager. An evaluation of these decisions helps us to determine the activities that need efficiency for better portfolio performance. The popular activities associated in this regard are:

1. Investment policy

2. Stock Selection

3. Market Timing

The risk-adjusted performance measures discussed earlier primarily provide an analysis on the overall performance of a portfolio without breaking it up into sources or components. Eugene Fama has given a framework towards this purpose. Let us see it now. As we know that Security Market Line (SML) is likely to provide a relationship between the systematic risk (B) and return on an Asset, Fama used this framework to break the actual realized return into two parts. A part of the return may be due to the size of risk that the asset carries and the remaining due to the superior selectivity skills of the portfolio manager. The excess returnform of SML can be used to estimate the expected returns. If actual return is more or less than such expected returns, it can be attributed to superior or inferior stock selection.

Then, total excess return on a portfolio (say A) = Selectivity + Risk

5.5.1 Risk Taking

To earn excess return, portfolio managers bear additional risk. By using the Capital Market Line (CML) we can determine the return commensurate with risk as measured by the standard deviation of return.

5.5.2 Market Timing

A portfolio manager's performance has been seen so far in the context of stock selection for superior performance. Managers can also generate superior performance from a portfolio by planning the investment and disinvestment activities by shifting from

stocks to bonds or bonds to stocks based on good market timing sense. Positioning of a portfolio is to be adjusted by correctly adjusting the direction of the market, either in the bull or bear phases. Managers with a forecast of a declining market can position a portfolio either by shifting resources from stocks to bonds, or restructure the component stocks in such a way that the beta of the equity portion of the portfolio comes down.

One way of finding the performance of a portfolio in this regard is to simply look directly at the way the fund return behaves, relative to the return of the market.

This method calls for calculating the returns of the portfolio and the market at different intervals and plot a scatter diagram to see the direction of relationship between these two. If a portfolio is constructed by concentrating on stock selection rather than keeping the market timing in mind, the average beta of the portfolio stands fairly constant and if we plot such a portfolio's returns and market returns, we observe a linear relationship.

On the other hand, if a manager was able to successfully assess the market direction and reshuffle the portfolio accordingly, we would observe a situation of high portfolio betas at times of rise in market and low portfolio beta at times of decline in the market. Portfolio managers can also achieve superior performance by picking up high beta stocks during a market upswing and moving out of equity, one could calculate the quarterly returns for a fund and for the market index like Bombay Stock Exchange's National Index of a 5-year period.

5.6. PORTFOLIO EVALUATION

Portfolio evaluation is the process of measuring and comparing the returns (actually) earned on a portfolio with returns (estimates) for a benchmarks. Evaluation factors:

1. Risk-return Trade-off

The performance evaluation should be based on risk and return not on either of them. Risk without return and return without risk level are impossible to be interpreted. Investors are risk-averse. But it does not mean that they are not ready to assume risk. They are ready to take risk provided the return is commensurate. So, in the portfolio performance evaluation, risk-return trade-off be taken care of.

2. Appropriate Market Index

The performance of one portfolio is benchmarked either against some other portfolio (for comparative position) or against some market index.

3. Common Investment Time Horizon

Investment period horizon of the portfolio being evaluated and the time horizon of the benchmark must be same. Suppose, a mutual fund scheme announces that it has earned the highest return, it must be verified before accepting whether the highest return has been earned during current year or during last 3 years or 5 years, etc.

5.7. Measures of Portfolio Performance

There are several measures for evaluation of portfolio performance. They are

I. Return per unit of risk

The return earned over and above the risk-free return is the risk-premium and is earned for bearing risk. The risk-premium may be divided by risk factor to find out the reward per unit of risk undertaken. This is also known as reward to risk ratio. There are two methods of measuring reward to risk ratio:

a) Sharpe Ratio (Reward to Variability Ratio)

The Sharpe Index measures the risk premium of the portfolio relative to the total amount of risk in the portfolio. The larger the index value, the better the portfolio has performed.

$$\text{Sharpe Ratio} = \frac{RP - IRF}{\sigma P}$$

b) Treynor Ratio(Reward to Volatility Ratio)

The Treynor Index measures the risk premium of the portfolio related to the amount of systematic risk present in the portfolio.

$$\text{Treynor Ratio} = \frac{RP - IRF}{\beta P}$$

II. Differential Return:

c) Jensen Ratio:

Michel Jensen has developed another method for evaluation of performance of a portfolio. This measure is based on differential returns. The Jensen's Ratio is based on the difference between the actual return of a portfolio and required return of a portfolio in view of the risk of the portfolio.

$$\text{Jensen's Index} = \frac{\alpha}{\beta}$$

αP = RP - RS

RP = Acutal Return on portfolio

RS = Expected Return on portfolio

RS = IRF + (RM – IRF) β

5.8. Formula Plans

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.

Somewhat similar to the constant-dollar plan is the constant-ratio formula. It is one of the oldest formulas in existence, having been used as long as 20 years ago. More important, it still stands up today, and is widely used, despite the drastic changes, which have taken place in the market. It fulfils, perhaps, better than any other formula, the basic theoretical requirements of formula investing. It permits the investor to participate to some extent in bull markets, while at the same time protecting him from serious price declines. And because it is not married to a fixed-dollar amount in stocks (as in the constant-dollar plan) or a 'norm' (as in the variable-ratio plans to be discussed in the next chapter), the method has a high degree of flexibility. One reason for its durability and its effectiveness is that no forecast whatsoever is made about the character of future markets, other than that they will continue to fluctuate, which is hardly a hazardous assumption.

Because of the clear-cut advantages of this plan, it has been widely used by institutions, such as trust, endowment and pension funds. Its first use, as will be seen later, was in a college endowment fund. In past years, however, its popularity with some

institutional investors has waned (although others are still quite satisfied), and it has been adopted more and more by individuals.

Here is how it works: The total investment fund is divided into two equal portions, one half to be invested in stocks, the other in bonds. As the market rises, stocks are sold and bonds are bought to restore the 50-50 relationship. If the market goes down, the reverse procedure is followed, bonds being sold and stocks bought to return to the 50-50 ratio.

5.9 Basic Assumptions and Ground Rules of Formula Plan

The formula plans are based on the following assumption:

- the stock prices move up and down in cycle.
- the stock prices and the high-grade bond prices move in the opposite directions.
- 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 predesignated 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.

5.10 Techniques of Formula Plan

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. Thus, as prices of securities rise, fewer units are bought, and as prices fall, more units are bought also called constant dollar plan, also called dollar cost averaging.

2. Dollar Cost Averaging

Periodic investment of a fixed dollar amount, as in a particular stock or fund or in the market as a whole, on the belief that the average value of the investment will rise over time and that it is not possible to foresee the intermediate highs and lows.

It is a technique of buying a fixed dollar amount of a particular investment on a regular schedule, regardless of the share price. More shares are purchased when prices are low, and fewer shares are bought when prices are high. Also referred to as “constant dollar plan”.

3. 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. When the balance is upset, it is periodically restored by moving money from over-performing assets to under performing ones. This system prevents one asset class from dominating the portfolio. This is one way to maintain a desirable asset allocation.

4. Variable-Ratio Plan

Variable-ratio plan 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. Some variations of this plan provide for the ratios to vary according to economic or market indices rather than the value of the aggressive portfolio.

5.11 QUESTIONS FOR DISCUSSION

1. Explain in detail about Portfolio Performance Evaluation.
2. Describe in detail about objectives of Portfolio Management.
3. Explain in detail about stages in Portfolio Management.
4. Discuss in detail about Formula Plans.
5. Explain in detail about techniques of Performance Evaluation.

UNIT V – Portfolio Performance Evaluation

5-Mark Questions

S. No	Questions	Bloom's Level
1	Define portfolio evaluation.	Remembering
2	Explain the need for portfolio evaluation.	Understanding
3	What is Sharpe Ratio?	Remembering
4	Define Treynor Ratio.	Remembering
5	Explain portfolio revision.	Understanding

8-Mark Questions

S. No	Questions	Bloom's Level
1	Analyze methods of calculating portfolio returns.	Analyzing
2	Evaluate Sharpe, Treynor, and Jensen performance measures.	Evaluating
3	Discuss the need and process of portfolio revision.	Understanding
4	Examine formula plans in portfolio management.	Applying
5	Explain risk-adjusted performance evaluation techniques.	Analyzing