INVESTMENT MANAGEMENT

DIRECTORATE OF DISTANCE EDUCATION

MAHARSHI DAYANAND UNIVERSITY, ROHTAK

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Content Writer: *Dr. Shakti Singh*

Contents

UNIT - 1

Investment

Objectives

The objectives of this unit are to

- discuss the nature, scope , avenues, elements and process of investment
- describe the types of risk, risk measurement, risk return relationship, cost involved in investment and sources of financial information
- explain the concept of time value of money

1. Introduction All of us whether individuals or organizations earn money by different economic activities and spend it for satisfying our wants. Sometimes, Income of people is more than their expenditure and other times, their expenditure on goods and services is more than income, these differences result into saving and borrowing of money respectively. When income is more than consumption people incline to save (surplus money). They have different alternatives to deal with their surplus money. Possibly some people may put extra money under a mattress or in a box in their home and wait for the time when their consumption desires go beyond current income. However, when they will take out their savings from mattress or box the amount will be same. One more possibility is that they may leave immediate possession of their savings for getting larger amount of money than current saving in future for consumption. Simply those who give up immediate possession of savings expect to receive in the future a greater amount than they gave up and those who consume more than their current income are willing to pay back more in future than they borrowed. In laymen language investment means sacrificing the present consumption to get a return in the future. It can be understood in the form of equation also. Saving = Income – expenditure. Once saving is given some one i.e. individuals or institutions in the expectation or with the aim of earning income or capital appreciation becomes investment. The individuals, corporate entities, banks and financial institutions, NGOs and government invest their surplus money for future return.

1.1 Investment: Prospective investors are individuals or institutions who have surplus money than they needs for immediate consumption. These individuals/institutions with surplus funds can invest in securities like equity shares, preference shares, debentures/bonds and in numerous physical assets like gold/silver or real estate or depositing in their bank accounts. Firms with surplus income may invest in its expansion activities or undertake new ventures. All above activities are called investment. Investment has two element namely time and risk. In the investment process present consumption sacrificed is certain, but getting a return in future is uncertain. This feature of investment signifies the risk factor. Economists view investment as net addition made to the nation's capital stock/productive assets used in further production of goods and services, whereas from financial managers point of view   investment is the allocation of money to assets that are expected to yield income or gain over a period of time. Further financial investment can be called an exchange of financial claims such as shares, debentures or bonds for money in the expectation of return and capital growth over the years. Generally "an **investment** is

the current commitment of money for a period of time in order to derive future payments that will compensate the investor for the time the funds are committed, the expected rate of inflation, and the uncertainty of the future payments".

1.2 Nature and Scope of Investment

Nature and scope of investment management can be understood by its broad definitions related to financial investments and economic investment and how it differs from speculation and gambling. Study of Investment management as a discipline covers

1. Meaning of investment, speculation and gambling, investment objectives, investment process

2. Avenues of investment, risk and return analysis, valuation of securities, Investment analysis approaches

3. Construction, evaluation and revision of portfolios.

1.3 Nature of investment management:

- It facilitates outlay/investment assessment.
- More the risk, more is the expected return.
- Decisions are taken only after evaluating complete process of investment.

1.4 Investment vs. Speculation: "Investment and speculation both involve the purchase and sale of securities in expectation of return but they are not same. Difference between investment and speculation can be understood from following Table No. 1

Table-1   Showing Difference between Investment and Speculation

Basis of Difference	Investor	Speculator
Time Horizon	Plans for a longer time horizon. Holding period may be from one year to few years	Plans for very short period. Holding period varies from few days to months.
Risk	Assumes moderate risk	Willing to undertake high risk.
Return	Likes to have moderate rate of return associated with limited risk	Like to have high returns for assuming high risk
Decision	Considers fundamental factors and evaluates the performance of company regularly	Considers inside information, hearsays and market behavior
Funds	Uses his own funds and avoids borrowed funds	Uses borrowed funds to supplement his personal resources

1.5   Investment Vs Gambling : Gambling is a very short term investment in a game or chance. It is different from speculation and investment. Time horizon involved in gambling is shorter than in speculation and investment. Further gambling is primarily done for entertainment, earning money is

secondary. Gambling involves artificial risks, whereas commercial risk exists in investment and speculation.

1.6 Element of Investment

The characteristics or elements of investment can be understood in terms of return, risk, safety and liquidity.

Return: The prime objective of any type of investment is to drive return. The expected return may be regular income (interest dividend, rent etc) or increase in the value of investment/capital appreciation, i.e. difference between the selling price and buying price of assets. The nature of investment (risky, less risky, non risky) is the deciding factor of required return from it.

Risk: Risk is the basic attribute of investment. Risk means variability in return because of loss of capital or nonpayment of income what so ever reason. More the risk more is the expected return and vice versa.

Safety: Safety rule of investment states that investors get back their original principal on maturity with no loss in value and hindrance.

Liquidity: It means an investor can sell his investment in market as need arise without incurring much transaction costs, less energy and time.

1.7 Objectives of Investment

The basic objectives of any investment is maximizing the return and minimizing the risk. In addition to the basic objectives other objectives of investment are safety, liquidity, hedging against the inflation etc. The above objectives may differ from one investor to another depending upon his/her risk appetite. Let us understand these objectives in detail.

i) Maximizing the Return: All investors expect a high return from their investment. The rate of return is the total income the investors receive during the holding period. Mathematically Return = Ending period value of investment minus Beginning period value of investment + dividend or interest X100 ÷ Beginning period value of investment. It is expressed in %

ii) Minimizing the Risk: The possibility that actual return from the security during its holding period may be less than the expected return is called risk. If the rate of return on an investment varies far and wide from one period to another is regarded riskier than those return do not vary much. But all investors want to reduce the risk of their investments.

iii) Safety: The safety principle of investment differs from one investment to another. Investment in government securities, deposits with bank are considered more safe than corporate securities like equity shares, debenture and deposits with NBFCs.

iv) Liquidity: Liquidity means conversion of investment into cash when needed without wasting time and incurring costs. Liquidity depends upon marketability and trading facilities. For examples securities listed in Sensex and Nifty are more liquid.

v) Protection against Inflation: The rate of return on investment should be higher or at least be equal to the inflation rate in the economy or else the investors will experience loss in real terms.

vi) Tax Exemptions: Some investors park their funds in financial instruments exclusively for reduction in their tax liability. Some investments provide tax exemptions whereas some offer tax benefits.

1.8 Investment Avenues: Investment avenues mean various types of investment opportunities available to park the savings as per the requirement of the investors. Generally investors park their funds either in real assets like gold, silver, land, etc. or financial assets like equity shares, debentures, government bonds etc. A brief discussion of different type of investment avenues are:

Equity Shares-: Investors can invest in equity shares of joint stock Company either in primary market or secondary market. Investors of equity shares get ownership right in company and receive dividends. If company is a good performer in industry and has potential for future growth, market price of share moves high consequently shareholders can sell shares at profit. High performer and dividend paying company's shares are named as blue chips/growth/income shares.

Preference Shares: Preference shares are a hybrid of equity shares and debentures. Preference shareholders get ownership rights as well as retain the privilege of fixed return on their investment. They have the priority to get a fixed rate of dividend and get back their capital back at time of winding up of company before equity share holders.

Debentures and Bonds: A bond or debenture is a creditor ship security on which the investors get fixed rate of interest and principal amount back at specified time/date from issuers. These are termed as long-term debt instruments. Many types of debentures and bonds have been designed keeping in view the need of investors.

Depository Receipts (GDRs/ADRs): Global Depositary Receipts are securities in the form of a depositary receipt or certificate created by the overseas depositary bank outside India and issued to non-resident investors against equity shares or Foreign Currency Convertible Bonds (FCCBs) of an issuing company. A GDR issued in America and listed in American stock exchange only is called American Depositary Receipt (ADR). Investors of ADR/GDR gets dividends/interest on their investment but do not enjoy the voting right.

Warrants: A warrant is a right to buy equity shares at a specified price within a stipulated time period. Generally a warrant is offered with preference shares or debentures/bonds to make them attractive. A warrant holder is neither has right to receive dividends nor a voting right before exercising his right. On the expiry date, If the exercise price is lower than market price of share, the warrant holder will buy the shares/exercise warrant as it is profitable. On the other hand, if the exercise price is more than the market price, the warrant holder would prefer to liquidate the debt of the firm and will not exercise his right to buy shares.

Derivatives: A derivative is an instrument (to buy or sell securities/assets) whose value is derived from an underlying asset such as stocks, bonds, commodity, stock indices like Sensex and Nifty. Commonly

traded derivatives in stock exchanges are futures and options. Speculators do derivative trading with very less investment. However, investors also participate in derivative market for reducing the risk.

Bank Deposits: Depositing money with bank either in saving account or time deposit accounts is highly liquid and suitable investment avenue. Deposits in savings bank account provides less return but almost zero risk,   is best option for setting aside funds for emergencies, whereas bank fixed deposits is good for investors who want to preserve money value in the short term. Though, over a long period of time returns on fixed deposit may be lesser than inflation.

Company Fixed Deposits/Public Deposits: Many companies like banks offer public to deposit their money with them for a fixed period of time. Companies offer higher rate of interest on fixed deposits than bank but these are unsecured and carry risk. Credit rating of company offering public deposits must be taken into consideration.

Post Office Deposits and Certificates: Indian Postal department also allow people to deposit money in saving account, recurring deposit and fixed deposit account like banks. There are also varieties of post office savings certificates which are risk free and provide high yield to investors. For example National Savings Certificates (NSC) is sold by post office to investors. Maximum post office saving schemes offer tax exemptions/concession.

Life Insurance Policies: Life insurance policies not only a protection of risk but also serves as an investment avenue**.** These policies promote savings and additionally provide insurance cover. Life insurance policies are also eligible from tax exemption.

Provident Fund Scheme: Public and private sectors employees can invest certain percentage of their salary in different types of provident fund as applicable to them. Moreover, investment in (PPF) Public Provident fund Scheme operated by the State Bank of India is open for every member of public whether employed or not.

Equity Linked Savings Schemes (ELSSs): Investors who take risk in the expectation of high return can invest in units of growth oriented mutual funds. ELSSs are equity/growth oriented mutual funds where investors have to hold the investment for a minimum period of three years. These schemes have higher risk than PPF and NSCs, but at the same time offer higher returns. ELSSs investors get tax deduction under Sec. 80.

Pension Plans: Pension plans are investment schemes that allow savers to contribute a part of their income periodically to mount up amount over a period of time and provide them with sturdy income in the form of pension after retirement or reaching a certain age. These Plans provide financial security so that when they retire from job can still live with pleasure without compromising on their present standards of living. Many banks, insurance companies, are currently offering retirement/pension plans to needy people. Investment in pension plan also attracts tax deduction under Sec. 80.

Government and Semi-Government Securities: Any member of public can invest in the shares or bonds of Government/ semi-government/statutory bodies. The credibility of the government and government undertakings is high that is why less risk exists in these securities.

Mutual Fund Schemes: Investment in units of mutual fund mean indirectly investing in corporate securities. Unit Trust of India was the first financial institution established as mutual fund in our country. After that many commercial banks and financial institutions of both public and private sector o set up their subsidiary as mutual funds. Mutual funds offer numerous investment schemes according to the needs of investors.

Real Assets: Investment in immovable property like land and commercial building is most attractive because of high expected return. Most Investments in real assets are also made when the expected returns are very attractive. But investment in real assets require huge amount and further these are often linked with the future development plans of the location.

Bullion Investment: Investment in gold, silver, and other precious metals is termed as bullion investment. These metals are traded in the metals exchange. It is observed in the past that investment in bullion never disappointed investors. It has always provided return above inflation rate.

1.9 Investment Process The investment process is a stream of activities which ultimately leads to investment. It enables an investor to understand the various sources of investment strategies and philosophies. An Investment process consists of the following steps:

 1. Deciding investment goals

2. Analysis of securities

3. Construction of portfolio

4. Evaluating performance of portfolio

 5. Revision of portfolio

1. Deciding Investment Goals: Investment goals differ from one investor to another. These are set keeping in mind the basic goal of investment i.e. maximizing the return and minimizing the risk. The secondary goals of investment include regular income, capital gain, tax savings, liquidity and safety of principal. Further, investors have to select securities or financial instruments to construct portfolio to meet their investment goals.

2. Analysis of Securities: This is done by fundamental and technical analysis to find the intrinsic value of securities and the future trends of price movements in them respectively. Analysis of securities helps the investors to identify whether the securities are underpriced or overpriced. Investors can maximize return by investing currently underpriced securities but having potential to touch the peak. Further under this step investors are guided by the standard principal of investment buy at low price and sell when it is high.

3. Construction of Portfolio A portfolio is a blend of securities designed to meet investor's primary goal of investment to maximizing the return and minimizing the risk. To achieve this basic goal he diversifies his portfolio and allocates funds among different securities of different companies of different industries. A well diversified portfolio is comparatively less risky than holding a single security. Diversification of a portfolio may be on the basis of debt and equity securities, industry and company. When the securities are selected included in portfolio and funds are allotted construction of portfolio is completed.

4. Evaluating performance of Portfolio: An efficient managed portfolio calls for evaluation. This step is also called portfolio appraisal. Portfolio appraisal involves measurement of risk and return of security from time to time and comparing it with expected risk and return. Appraisal warns of the loss and steps can be taken to avoid such loss further.

5. Revision of portfolio: Revision of the portfolio depends on the results of appraisal. If the current portfolio is not serving the objectives of investment, the investor must design a new portfolio by selling certain less /underperforming securities and buying others that can improve return on portfolio.

1.10 Tax and Transaction Costs in Investment

Generally, expenses incurred and levies paid when buying or selling goods or services are named as tax and transaction. Tax and transaction costs are the part and parcel of investment. Some of the most common forms of cost include brokerage charges, stamp duty, securities transaction tax and other charges. Knowledge of transaction costs is important to investors because they are one of the key determinants of net returns. Transaction costs diminish returns. High transaction costs means thousands of rupees lost from not just the costs themselves but because the costs reduce the amount of capital available to invest. Different asset classes (securities) have different ranges of standard transaction costs and fees. An investor should always try to invest in that security where transactions and levies are low. When a fund manager buy or sell investment, portfolio transaction costs are incurred. These include broker execution commission and taxes. In addition to these direct costs, there are indirect portfolio transaction costs called dealing spread arising from the difference between the buying and selling prices of underlying investments. There are several charges that an investor has to bear when buying or selling securities. The following are some examples of transactions cost:

1. Brokerage Charges

As we know an investor directly cannot buy or sell securities in the stock market it is always through brokers. The broker charges fees "as his commission for the services rendered. For instance, if your transaction amounted to Rs 3,00,000, then your broker may charge a commission of 0.3% on that transaction which will amount to Rs 900. Brokers may be full service brokers and discount brokers depending upon the kinds of services they offered. Full-service brokers are brokers who provide an all-inclusive trading service that includes trading in stocks, currency, and commodities as well as related service of research advisory, management of sales and assets, investment banking, etc. The charges of a

full-service broker could range from anywhere between 0.01% to 0.50%. of transaction value. Discount brokers provide investors with an execution platform for trading and charge a commission on their service. They, however, do not offer any investment advisory services. Their charges range between a flat fee of Rs 10 to Rs 20 per trade on intraday trading and delivery."

2. Securities Transaction tax

"This is charged second only to the brokerage charge and is charged on both sides of the buy and sale transaction. In the case of intraday trading, the STT is only charged when the stock is sold. STT charges about 0.1% of the total transaction, on each side of trading, for delivery in general. The charges for intraday STT are around 0.025% of the complete transaction on the selling party."

A) Stamp Duty: "This fee is levied on the value of shares that are transferred and in India; this rate differs from state to state as the duty is levied by various states. It is charged on both the buying and selling sides, charged on the total turnover amount."

B) Service Tax: "Service charge is 15% of the brokerage charge paid and is the same for delivery as well as intraday trading".

C) Transaction Charges: "Charged by the stock exchanges, these are charged on both sides of the trading with the charges for intraday and delivery being the same. A transaction fee of 0.00325% of the total amount is charged by the National Stock Exchange, while a transaction fee charged by the Bombay Stock Exchange amounts to 0.00275% of the total amount".

D) Securities and Exchange Board of India (SEBI) Turnover Charges

"The apex market regulator of the securities markets in India charges a fee on both sides of a trading transaction with a turnover charge of about 0.0002% of the total amount. The charges are the same for both intraday and delivery trading."

E) Depository Participant Charges

"The two stock depositories in India, the Central Depository Services Limited and the National Securities Depository Limited charge a fixed sum for keeping your transactions in an electronic form."

3. Capital gain tax

"When you sell your share holdings at profit before the completion of one year since buying it is considered a short term and above one year it is termed long term capital gain. Special rate of tax of 15% is applicable to short term capital gains on equity shares irrespective of your tax slab. Long-term Capital Gain (LTCG) on equity shares above Rs. one lakh is taxable at the rate of 10% without the benefit of indexation. These are some of the charges that an investor or trader must keep in mind when seeking to trade on the stock markets."

Source: https://cleartax.in/s/equity-investment-cost

1.11 Risk and Return analysis:

Risk: In finance risk is defined as variability in return or volatility in return. Risk is the chance of the actual return being less than the expected return. The probability that the return from any asset will differ from the expected return means the risk inherent in that asset. While assessing the risk the list of probability of outcomes of all possible events is prepared. Risk is different from uncertainty. In uncertainty the feasible occurrences and their probabilities are not known. The total Risk is the combination of systematic / uncontrollable risk and unsystematic/ controllable risk

 Total risk= Systematic Risk + Unsystematic Risk

1. **Systematic Risk:** External factors causes systematic risk to a company, the company cannot control this risk. It is also called uncontrollable/unavoidable/Non-diversifiable risk. Whole market/all firms/industry is affected by systematic risk. The sources and types of systematic risk are outlined in the following heads:

> **Market Risk:** The variability of return on a security/asset that arises because of alternating ups and downs/ bull and bear stage of market is called market risk. Both tangible events (quake, conflict, political turmoil, depreciating currency value) and intangible events like over reactions of market (psychology effect to tangible events) push the market either upward or downward affect the market. In simple words the risk of moving down return because of up and down market movement is called market risk.

> **Interest Rate Risk**: When interest rate change results in variability of return is called interest rate risk. Interest rate risk affects both the bond return and cost of borrowing. When interest rates rise new issues will approach the market with higher interest rate then prices of old bonds/debts will go down. In the same way when the interest rate decline new issue comes to the market with low interest income than the price of older bonds/debts will rise. Most traders in the stock market trade with borrowed funds. The rise in the interest rate affects their profit margin. It leads to fall in the demand of security and further it will lead to fall in the value of stock indices. Increase in interest rates negatively affects the profitability of the company which leads to decline in earnings per share.

> **Inflation Risk/Purchasing Power Risk:** Inflation means loss of purchasing power of money. The variation in rate of return because of inflation or probable loss in the purchasing power of the returns to be received is named as inflation/purchasing power risk. The rate of inflation is more than the nominal return on investment. The rise in prices penalizes the returns to investors. To tide over the purchasing power risk the investor should try to ensure that nominal rate of return is greater than the inflation rate.

2. **Unsystematic Risk-** Here the factors are specific, unique and related to the industry or company. It affects to a particular company or an industry. It is also termed as controllable/Avoidable/Diversifiable risk. It is classified into following categories:

Business Risk: Business risk is that part of unsystematic risk that arises because of operational environment of the company. Variation in the expected operating income reflects business risk. Business risk is further of two type's namely internal business risk and external business risk. Internal business causes because of internal factors of the company like fluctuation in sales, inefficiency of management, high fixed costs, obsolete product etc. External business risk arises from operating conditions imposed on the firm by circumstances beyond its control. These may be societal and political factors, monetary and fiscal policies of state, trade cycles or macroeconomic environment in which a firm or industry operates.

Financial Risk: Financial risk arises when a company uses debt capital along with equity capital. It is termed as financial leverage. Financial leverage is a tool to enhance the return to equity shareholders. The presence of debt and preference capital results in a commitment of paying of interest or a pre-fixed rate of dividend. The interest and fixed rate payment of dividends affect the payments that are due to equity shareholders. Sometimes the EBIT of the firm may vary adversely and it is not sufficient to pay the interest on borrowed funds in such situation firm faces financial risk. Financial risk is an avoidable risk because the management decides the share of equity and debt funds in the total capital.

1.12   Measurement of Risk:

"Risk is often associated with the dispersion in the likely outcomes. Dispersion refers to variability. It is assumed to arise out of variability, which is consistent with the definition of risk as the chance that the actual outcome of an investment will differ from the expected outcome. If an assets' return has no variability, it has no risk. For example a one-year treasury bill purchased to yield 10 percent and held to maturity will yield 10%", as government will not make any default. So it is risk free security. There are two measures to precisely measure risk. These are standard deviation and Coefficient of variance.

Standard Deviation: Standard deviation is a measure of dispersion or variability of return. The dispersion/variability of return indicates the degree of risk. In statistics standard deviation is the square root of squared deviations calculated from the mean. The deviation is the difference between an outcome and the expected mean value of all outcomes. It is shown by the symbol 'σ' Sigma. Total risk of an asset or a portfolio is measured by standard deviation or in other words total variability of a security or portfolio's return is measured by standard deviation what so ever the reason behind variability.

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

Returns:

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

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

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

Types of Return:

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

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

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

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

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

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

1.13 Risk Return Relationship: Understanding risk return pay-off is essential before managing the portfolio of securities. The relation between risk and return is that, potential return rises with an increase in risk and falls with decrease in risk. This means that a security with low risk gives low returns whereas high levels of uncertainty or risk of the security provide huge returns. Risk return relationship is depicted in following figure
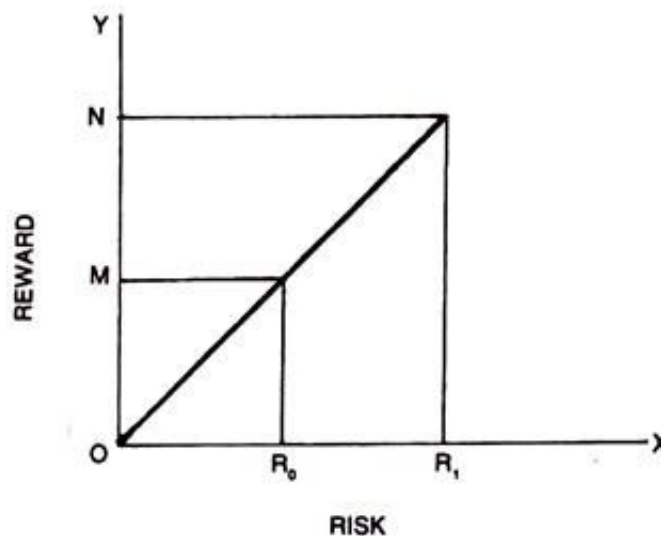
Fig. 2

At R_0 risk, the return/ reward is only OM. If we take a higher risk of R_1, the return/reward will increase to ON. But if return/reward is desirable, risk is undesirable. Hence, the investor who wants the risk taken to be only Ro, but return to be ON he has to plan his Investments in portfolio. This is what in essence is called portfolio management

The portfolio return is related to risk. There is also a risk free return, which is secured by any investor by keeping his funds in say bank deposits or post office deposits or certificates. Beyond the risk free rate, the excess return depends on many factors like the risk taken, expertise in selectivity or selection, return due to diversification and return for expertise of portfolio manager.

Let us take two companies X and Y to calculate the expected return and risk

Company X's Return

Economic Condition	r (Return) %	P (Probability)	PX r Expected Return
A	6	.10	.6
B	7	.25	1.75
C	8	.30	2.4
D	9	.25	2.25
E	10	.10	1.00
			$\sum E(r) = 8$

Company Y's Return

Economic Condition	r (Return) %	P (Probability)	PX r Expected Return
A	4	.10	.4
B	6	.20	1.2
C	8	.40	3.2
D	10	.20	2.0
E	12	.10	1.2
			$\sum E(r) = 8$

In the above example expected means of returns are same in both X and Y companies that is 8%. Company X's return varies from 6% to 10% while the company B's return varies from 4% to 12%. If some investor looks into only return he /she can invest in either X or Y Company as mean return is 8% in both cases. But to find risk standard deviation technique is applied.

Computation of Risk and Return if an Investor Select Company X for Investment

Economic Condition	r (Return) %	P (Probability)	PX r Expected Return	r-E(r) Deviation	$\{r-E(r)\}^2$ Deviation Squares	P X$\{r-E(r)\}^2$ Variance
A	6	.10	.6	-2	4	.40
B	7	.25	1.75	-1	1	.25
C	8	.30	2.4	0	0	0
D	9	.25	2.25	1	1	.25
E	10	.10	1.00	2	4	.40
			$\sum E(r) = 8$			1.30

σ =$\sqrt{1.30}$ =1.14 Expected return in Company X is 8%, Whereas Risk is 1.14 %

Computation of Risk and Return if an Investor Select Company Y for Investment

Economic Condition	r (Return) %	P (Probability)	PX r Expected Return	r-E(r) Deviation	$\{r-E(r)\}^2$ Deviation Squares	P X$\{r-E(r)\}^2$ Variance
A	4	.10	.4	-4	16	1.6
B	6	.20	1.2	-2	4	0.8
C	8	.40	3.2	0	0	0
D	10	.20	2.0	2	4	0.8
E	12	.10	1.2	4	16	1.6
			$\sum E(r) = 8$			4.8

σ =$\sqrt{4.8}$ = 2.19 Expected return in Company Y is 8%, whereas Risk is 2.19 %

As mentioned above expected return is same for X and Y companies but the variation in expected return are different. Company X's return is stable compared to company Y's expected return as variability in X's return **(Risk) is 1.14%** whereas it is **2.19%** in case of Y. The standard deviation helps to measure the variability of return. The variability in return includes both systematic and unsystematic risk. So an investor prefers Company X for investment.

1.14 Time Value of Money: Concept of time value of money states that money which is received today, is more valuable than money receivable in future. The amount of money that is received early can be further reinvested to earn income in the form of interest. That is why; people prefer to receive money at an earliest. It is also termed as an individual's **time preference for money**. The time preference for money is generally expressed by an interest rate. For example if interest rate is 6% it means that an individual can sacrifice the opportunity of receiving Rs.100 today if he is offered Rs 106 after one year. The following are the two technique of time value of money:

a) Compounding Technique: Compounding of interest may be done once in a year or it may takes place for variable periods (like semi-annual, quarterly etc) or may be for annuity or uneven series of cash flows. For example compound value or future value of a single cash flow can be calculated by the following formula:

$CV = Po (1 + I) n$

Where,

CV = Compound value, Po = Principal amount, I = Interest per annum, n = Number of years for which compound is done

$(1 + I) n = CVIF I…..n$ or future value inter factor for interest and 'n' years."

II) Discounting Technique: Under discounting technique an interest rate is used to discount the future cash flows (may be an annuity or uneven series of cash flows or single flow) to find out their present values. The present value of a future cash inflow (or outflow) is the amount of current cash that is of equivalent value to the present value. Basic formula to compute present value of a single cash flow is:
Present value can be calculated by the following formula:

$$PV = FV_n \left[\frac{1}{(1+I)}\right]^n \text{OR} \quad FV_n \left[PVIF_{I,n}\right]$$

PV = Present value

FV_n = Future value receivable at the end of 'n' years I = Interest rate or discounting factor or cost of capital n = Duration of the cash flow

$PVIF_{I,n}$ = present value interest facts at 'I' interest and for 'n' years

For example the present value of $ 40,000 receivable after three year at 10% interest rate will be

Solution: $PV = FV_3 \left[\frac{1}{(1+I)}\right]^3$

= $ 40,000 [1/1+0.10]3
= $ 40,000 (0.751)
= $ 30,040
Refer present value factor .751 in PV Table at 3 years for at 10 % rate.

1.15 Sources of Financial Information

Before proceeding to investment a rational investor must know the different avenues/alternatives of investment in a particular economy/market. Further he should possess necessary intuitive/in sigh skill to analyze the economy, industry and the company. Plenty flow of information is needed for fundamental analysis to make potential investment. Sources of information depend on the type of information needed. The following are the major sources of financial information to cater the needs of investors:

a) Information of Global and Domestic Economic Environment

Information regarding current global economic environment is crucial for investment in domestic market as well as in international market. Global political developments, wars and foreign markets influence domestic income, output, employment and investment. Financial dailies like Economic Times, Financial Express, Business Line and Business standard etc., report on world and domestic economic affairs (like national economic policies, national income/GDP, agricultural output, monsoon, money supply, inflation, Government policies, taxation etc. Apart from this, foreign journals like London Economist, Far East Economic review and Indian journals like Business India, Fortune India etc., give day-today developments that took place abroad and within the country relating to trade and commerce. IMF News Survey, World Bank and IMF Quarterly Journals, Newsletters of Foreign Banks like Grindlays, Standard Chartered etc., report on world developments. The reports of the Planning Commission and annual reports of various ministries, RBI periodic bulletins, reports on currency and foreign exchange reserves provide information on economy, industry and trade sectors of our country.

b) Industry Information

The monthly reports of various business associations, Government publications, daily financial papers, (CII) Confederation of Indian Industry, Directory of Information published by Bombay Stock Exchange, reports of the Planning Commission, associations such as Chambers of Commerce, Merchants' Chamber etc., give large amount of information on different types of industry.

c) Company Information

Information related to company regarding its financial information, management team can be accessed through their annual reports, Stock Exchange publications, Department of Company Affairs' circulars, press releases on corporate affairs by Government, industry, chamber etc. Financial papers, fortnightly journals of capital market, Dalal Street, Business India furnish information about the companies listed on recognized stock exchanges.

d) Security Market Information

Investments in financial assets require information about security market. The credit rating of companies, market trends, security market analysis, market reports, equity research reports, trade and settlement data, listing and delisting records, book closures, BETA factors etc., are called security market information. Financial papers like Economic Times, Business Line, Financial Express etc., report on trade cycles and settlements, record dates, book closures etc. Charted Financial Analyst reports on

economic data, company information, market information, security analysis, and beta factors etc., which help in security analysis. SEBI, BSE, NSE, and RBI have provided access to their official website for stock market information.

Self Assessment Questions

1. What is investment and how will you distinguish it from speculation and gambling?

2. Define securities and give a brief account of different type of securities.

3. In the absence of information, the investor cannot carry out his investment programme. Comment

4. Define different types of risk and return and how these are measured?

5. What is time value of money? Distinguish compounding and discounting techniques of time value of money.

6. Discuss the various types of cost involved in security transactions.

7. Explain the primary and subsidiary goals of investment.

8. Describe the various steps involved in investment process.

Suggested Book Readings:

1. Security Analysis and Portfolio Management: - By Punithavathy Pandian. Vikas Publishing House PVT. LTD.

2. Security Analysis and Portfolio Management: - By S Sasidharan and Alex K Mathews. Tata McGraw Hill Education Private Limited.

3. Security Analysis and Portfolio Management: - By S Kelvin. PHI Learning Private Limited.

4. Security Analysis and Portfolio Management: - By Donald E Fisher, Ronlad J Jordon and A K Pradhan. Pearson Education.

UNIT - II

Capital Markets

Objectives

The objectives of this unit are to

● understand the primary and secondary market, different types of issue in primary market and participant in capital market.

● describe listing of securities, settlement of securities transactions.

● highlight the SEBI objectives, functions and role as capital market regulator.

● To understand the modus operandi of depository system.

Introduction: Financial markets have a significant role to play in a country's economic development. Financial market channelize the savings from the public (surplus sector) and make it available to(deficit sector) i.e. industry, agriculture and services sector. Financial market has two segments namely: money market and capital market. Money market deals in short term securities while capital market deals in long term securities. Capital market refers to the market or source which helps the corporate in arranging long term finance or long term capital through different capital market instruments like equity shares, preference shares, debentures and bonds. It is the market where securities for more than one year are bought and sold. Since the instruments representing the capital of the company are traded in the market it is called capital market. Capital market facilitates mobilization of resources by corporate and governments. Modern capital market consists of equity and debt segment future and options (F&O) segment. Capital market transactions take place through stock exchanges and it is regulated by Securities Exchange Board of India. The main components of capital market are primary market, secondary/stock market and financial institutions. The mechanism of capital market is described in the following image:
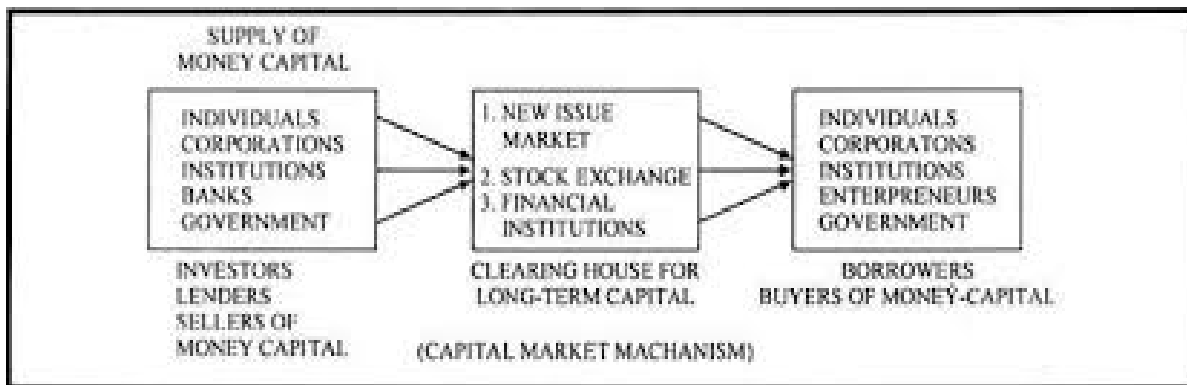
Source: Businessmanagementideas.com/financial market

2.1.   Structure of Capital Market

The capital market of India has four main constituents. These are government securities market, industrial securities market, financial institutions and financial intermediaries. The following diagram depicts the structure of Indian capital market:
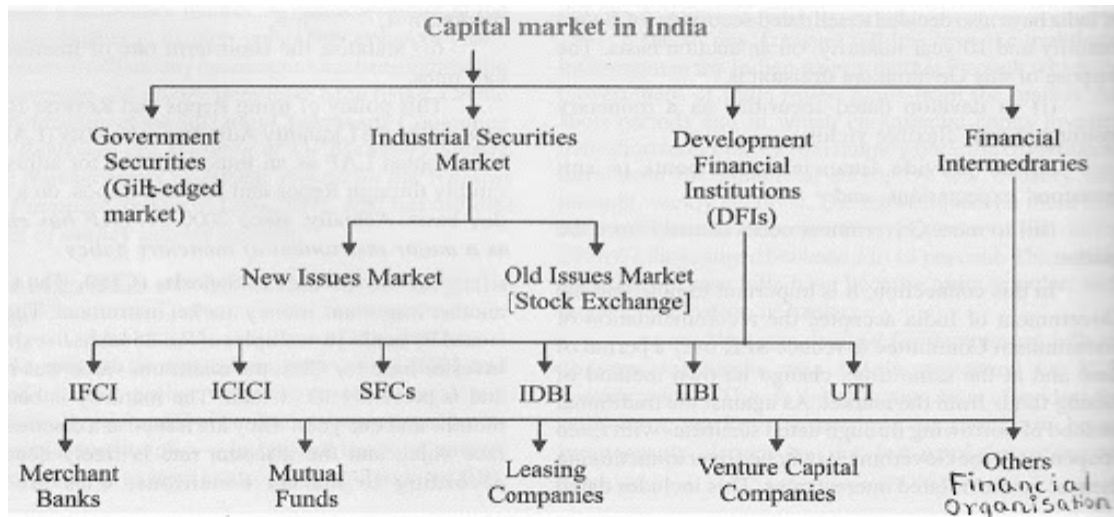
Source: Kalyan-city.blogspot.com/organizational-structure-of-indian-capital-market

1. **Government Securities Market**: In this segment government and semi government securities backed by Reserve Bank of India are traded. It is called Gilt-edged market too.

2. **Industrial Securities Market**: In this segment shares and debentures of the existing and new corporate firms of private sectors and public sector are traded. This market is further classified into two segments i.e. primary market secondary. In primary market fresh capital is raised by issuing new shares, bonds/ debentures. In the secondary market securities already issued in primary market are further traded between investors to investors through the registered stock exchanges.

3. **Development Financial Institutions**: This market segment consists of various special purpose financial institutions for example ICICI, SFCs, IDBI, SIDBI, EXIM Bank, UTI, etc. which provide long term finance for particular purpose and sectors of economy for which these are established.

4. **Financial Intermediaries**:   Financial Intermediaries like merchant bankers, mutual funds, lease financiers, venture capitalists etc. are organizations act as middlemen to facilitate transfer of funds from surplus sector to deficit sector.

2.2. Capital Market Instruments/Securities

The capital market instruments comprise of equity shares, preference shares, debentures and others hybrid/innovative instruments. There are different type of preference shares and debentures. The diagram reflects the type of corporate securities.

Types of Corporate Securities

```
                        Types of Corporate Securities
                                 Capital
                                   |
            +----------------------+----------------------+
            |                                             |
          Shares                                       Debentures
            |                                             |
     +------+------+                      +---------------+---------------+
     |             |                      |               |               |
   Equity     Preference               Simple          Bearer        Redeemable
                  |                      and             and              and
            +-----+-----+              Secured       Registered      Irredeemable
            |           |
      Participating  Non-participating
            |
      +-----+-----+
      |           |
   Cumulative  Non-cumulative
      |
  +---+---+
  |       |
Redeemable Irredeemable
```
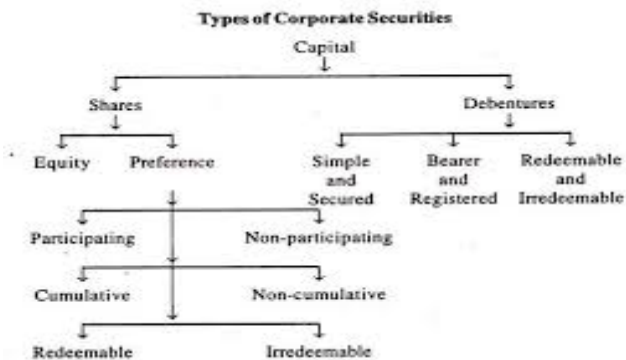
2.3.   New Issue/Primary Market

This market consists of all people, institutions, methods, mechanisms, services and practices involved in raising fresh capital for both new and existing companies. It deals in only new securities which are not issued earlier. The task for marketing and selling of securities to public is performed by merchant bankers, investment bankers' underwriters and brokers etc**.**

Functions of Primary Market: Main functions of New Issue Market are:

1. Facilitates transfer of funds from saving public to needy entrepreneurs for productive activities for setting up new companies or expansion/modification/diversification of existing enterprises.

2. Facilitate to sell existing firms to the public as going concerns by converting privately held ownership concerns into public limited companies.

Primary Market performs above functions by providing under mentioned three services:

1. Origination

Origination means deep examination/ scrutiny, analyzing, reviewing, validating and processing of new issue proposals by sponsors of issue. Before forming an opinion to give clearance to the new issue the originator scrutinize the current and proposed activities of the issuing company in terms of legal, environmental, technical, economic and financial aspects. Further they render advisory relating to type of securities be issued, price fixation, timing and size of issue, selling strategies etc.

2. Underwriting

When new issue is not welcomed by public, promoters get shock and all expenses paid to originators prove worthless. To avoid such negative outcome the company appoints underwriter who guarantee that they will buy part of issue not subscribed by market. This type of assurance provider is known as underwriter. Underwriting service is provided on commission basis and guarantees success of the issue.

3. Distribution

Distribution service is provided by dealers, brokers and sub brokers who are constantly direct in touch with present and prospective investors. Sale of securities by distributors to ultimate investors is called distribution.

2.4. Parties involved in the New Issue: The main agencies involved in the public issue are as follows:

- Managers to the Issue (lead manager)

- Registrars to the Issue

- Underwriters

- Bankers

- Advertising agencies

- Financial Institutions and

- Government/Statutory agencies.

2.5. Types of issue

A) Public Issue: It is a method by which companies raise finance by selling shares to investing public in the primary market. Public issue is of three types**:**

1. Initial Public Offerings (IPO): An issue made by a new company in the capital market is called an initial public offering. These issues are listed and traded on stock exchanges as specified in the offer document.

IPO Grading: The basic objective of **IPO** grading is to provide additional fundamentals information to the investors to assess the company offering equity shares or any other security that is convertible into equity shares at later date. IPO grading is given by a Credit Rating Agency like ICRA CRISIL etc. Grades are given on a five point scale. These grades reflect a comparative measurement of fundamentals of issuing company in relation to the other listed companies. The following grades are assigned based on fundamentals of issuing company:

IPO grade 1 - Poor fundamentals

IPO grade 2 - Below-Average fundamentals

IPO grade 3 - Average fundamentals

IPO grade 4 - Above-average fundamentals

IPO grade 5 - Strong fundamentals

2. Follow on Public Offering (FPO): Shares issued by a company already listed on a stock exchange are called a follow on public offer. These are also called follow on public issue.

3. Fast Track Issue (FTI): This facility is available only in BSE and NSE to a well established and compliant listed company in their follow on public offer and right issues. These companies have to provide only rationalize disclosures not comprehensive one for issue of securities.

B) Preferential Issue: When listed companies issue securities to a selected group of persons (financial institutions, mutual funds, high net worth individuals) under section Section 62(1)(c) of Companies Act 2013 it is called preferential issue.

C) Right Issue: If a listed company issues fresh securities to the existing shareholders in the specified ratio to the number of securities already held by them in compliance of the provision of Section 62(1)(a) of Companies Act 2013 it is called right issue of shares

2.6.   Types of Investors in New Issue Market

Different categories of investors buy shares in the primary market. They may be retail investors, qualified institutional buyers, employees of issuing company, existing shareholders of the issuing company etc**.** Basically they are classified into three categories:

Qualified Institutional buyers: Mutual funds, banks, financial institutions, and foreign investors authorised by (SEBI) fall in this category. 50% of the Offer Size is reserved for them.

Non-institutional investors: Resident Indian individuals, HUFs , companies, NRIs, societies, and trust whose application value is more than Rs. 2 lakhs**.** 15% of the Offer is reserved for them.

Retail Investors: They are defined in terms of the value of the primary issue applied by them. This value should not exceed Rs. 2 Lakh**.** 35% of the Offer is reserved for them.

Anchor Investor: An anchor investor is a qualified institutional buyer (QIB) in public issue who applied for a value of ₹10 crores or more through the book-building. Up to 60% of the QIB Category can be allocated to Anchor Investors.

2.7. Methods of New Issue in Primary Market

1. Public Issue through Prospectus: It is the most common method under which the issuing company through a document named as Abridged Prospects invite the public to subscribe its shares at a predetermined price. A prospectus provides all essential information about Issuer Company and purpose of issue, to decide the public to subscribe securities.

Merits

(i) This issue invites a large section of public to invest in the company through advertisement and shares allotted without any discrimination

 ii)   Sometime it is called direct method as no intermediaries are involved between company and investor.

Demerits

i) This method of issuing of shares is quite costly as it involves huge amount of expenditure like underwriting commission, brokerage, administrative expenses, publicity expenses, legal charges etc.

ii) It is suitable for large issue only.

2. Offer for Sale: Under this method, the company places its securities at an agreed fixed price with some investment banker (firm of brokers/sponsor) who resale these securities to ultimate investors at a higher price. The margin of investment banker/sponsor is called spread which is the difference between selling and buying price.

Merits: This method provide relief to company as it is relieved from printing and advertisement of prospectus and allotment of securities

Demerits: Investment bankers/sponsor sells the securities to investing public at a higher price. The spread earned by them does not become assets of Issuer Company.

3. Private Placement of Securities

This method is similar to offer for sale except the investment banker/sponsor under this method resale the securities at high prices to selected group of individual or institutional investors. The spread is their remuneration for this deal. No need to appoint underwriters as sponsor guarantees hundred percent placement.

Merits:

(a) During phases of recession or depression public do not response through prospects private placement is the suitable choice for new issue of securities.

(b) It suits small companies to raise finance by selling new shares.

Demerits:

(i) As securities are hold by handful of investors, chances of manipulation of market price are increased.

(ii) It down grades image of company in the minds general public.

4. Book Building: "Book Building may be defined as a process used by companies raising capital through Public Offerings-both Initial Public Offers (IPOs) and Follow-on Public Offers (FPOs) to aid price and demand discovery. It is a mechanism where, during the period for which the book for the offer is open, the bids are collected from investors at various prices, which are within the price band specified by the issuer. The process is directed towards both the institutional investors as well as the retail investors. The issue price is determined after the bid closure based on the demand generated in the process**".**

Major Steps in Book Building Process:

1. Issuing company appoint lead merchant banker as 'book runner' and syndicate members

2. Number of shares to be issued and the price band for the bids are decided by issuing company.

3. The syndicate members put the orders placed by investors into an 'electronic book' which stays open for five days. It is just like open auction and is called bidding.

4. Bids are entered within the specified price band and can be changed by the bidders before closing of book.

5. On closing of book building period, book runners assess the bids considering various price levels.

6. Issuing company along with book runners decide the final price at which shares shall be issued.

7. Securities are allocated to the successful bidders and refund is made to rest of the bidders.

Example:

The issuing company doesn't fix up a particular price for the shares, but instead gives a price range/band between Rs. 80 to 100. The lowest price (Rs. 80) is known as the floor price and the highest price (Rs. 100) is known as cap price. "When bidding for the shares, investors have to decide at which price they would like to bid for the shares, e.g., Rs. 80, Rs. 90 or Rs. 100. They can bid for the shares at any price within this range. Based on the demand and supply of the shares, the final price is fixed. The price at which the shares are allotted is known as cut off price. The entire process begins with the selection of the lead manager, an investment banker whose job is to bring the issue to the public. Both the lead manager and the issuing company fix the price range and the issue size. Next, syndicate members are hired to obtain bids from the investors. Normally, the issue is kept open for 5 days. Once the offer period is over, the lead manager and issuing company fix the price at which the shares are sold to the investors.

If the issue price is less than the cap price, the investors who bid at the cap price will get a refund and those who bid at the floor price will end up paying the additional money. For example, if the cut off in the above example is fixed at Rs. 90, those who bid at Rs. 80, will have to pay Rs. 10 per share and those who bid at Rs. 100, will end up getting the refund of Rs. 10 per share. Once each investor pays the actual issue price, the share is allotted."

Source**: http://www.yourarticlelibrary.com/accounting/share/book-building-meaning-process-and-comparison/56798**

5. Employee Stock Option Plan: Employee Stock Option Plan (ESOP) enables employees of a company to buy a fixed number of shares at a predetermined price called exercise price which is lower than existing market price during a specified time period. Sometime a certain part of employee's monthly salary or remuneration is paid in the form of company's securities. This scheme create a sense of belongingness in employees towards company and useful to companies whose business is purely based on the talent of their employees, as in case of IT industry. Statutory compliance is strictly followed while implementing ESOP

2.8. Pricing of New Issues

An issuing company may determine the price of specified securities in consultation with lead manager or through book building process. The coupon rate and conversion price of convertible debt instruments are also determined in the same manner.

SEBI Guidelines for Issue of Fresh Share Capital

1. Company should have the shares issued to the public be listed in one or more recognized stock exchanges.

2. Where the issue of equity share capital involves offer for subscription by the public for the first time, the value of equity capital, subscribed capital privately held by promoters, and their friends shall be not less than 15% of the total issued equity capital.

3. An equity-preference ratio of 3:1 is allowed.

4. Capital cost of the projects should be as per the standard set with a reasonable debt-equity ratio.

5. New company cannot issue shares at a premium".

SEBI Guidelines for First Issue by New Companies in Primary Market:

1. A new company which has not completed 12 months of commercial operations will not be allowed to issue shares at a premium.

2. If an existing company with a 5-year track record of consistent profitability, is promoting a new company, then it is allowed to price its issue"

Source: https://accountlearning.com/sebi-guidelines-fresh-capital-share-primary- secondary mkt.

2.9.   Allotment of Shares

"The basis of allotment is decided by lead managers or investment bankers within two weeks of the date of closure in compliance of provisions of Companies Act 2013. As per SEBI guidelines the basis of allotment should be completed within 15 days of the issue closing date. As soon as allotment is completed, with in two working days the details of credit to demat account/allotment advice and despatch of refund order needs to be completed".

2.10.   Secondary Market/Stock Exchanges

The secondary market is a market in which existing securities are resold or traded. This market is popularly known as stock market or stock exchange. As per Securities Contract(Regulation) Act, 1956 " Stock exchange is an association, organization or body of individuals, whether incorporated or not, established for the purpose of assisting, regulating and controlling, business in buying, selling and dealing in securities." Main stock exchanges of India are Bombay Stock Exchange, National Stock Exchange and Over the Counter Exchange of India.

Functions of Secondary Market

1. Provides platform for continuous trading of securities.

2. Helps in finding price of securities

3. Ensure safe and fair trading

4. Aid in financing the industry

5. Disseminate information

6. Act as barometer of economy

2.11.   Stock Market Index

"A stock market index is a statistical measure which shows changes taking place in the stock market. To create an index, a few similar kinds of stocks are chosen from amongst the securities already listed on the exchange and grouped together. The criteria of stock selection could be the type of industry, market capitalization or the size of the company. The value of the stock market index is computed using values of the underlying stocks. Any change taking place in the underlying stock prices impact the overall value of the index. If the prices of most of the underlying securities rise, then the index will rise and vice-versa. In this way, a stock index reflects overall market sentiment and direction of price movements of products in the financial, commodities or any other markets. Some of the notable indices in India are NSE Nifty, BSE Sensex Broad-**based** indices like Nifty 50 and BSE 100, Indices based on market **capitalization** like the BSE Smallcap and BSE Midcap **Sectoral** indices like Nifty FMCG Index and CNX IT."

Source: https://cleartax.in/s/stock-market-index

2.12.   Trading at Stock Exchanges

Buying and selling of securities takes place during business hour of specific stock exchange where these are listed. All trading in stock exchanges takes place between 9.55 am and 3.30 pm. Monday to Friday in India. When trading of securities is done beyond business hour it is called kerb trading. An investor cannot buy or sell scrip directly in stock exchange rather it is done through brokers only as per transparent laid down procedure. A brief discussion of trading and settlement procedure of securities in a stock exchange is mentioned below:

1. Opening of Demat Account: All securities are now in electronic format. There are no issues of physical shares/securities anymore. So an investor must open a dematerialized account with the depository participant to hold and trade in such electronic securities. In India there are two depository namely Central Depository Services Ltd. (CDSL) and National Depository Services Ltd. (NDSL).

2. Appointment of Broker: When a person wishes to trade in the stock market, it cannot do so in his/her individual capacity. The transactions can only occur through a broker or a sub-broker. So according to one's requirement, a broker must be appointed. A broker may be an individual/partnership/ company/ bank/financial institution registered under SEBI.

3. Placing Orders: An investor will place an order with his/her broker to buy or sell shares online if the broker provides such services. Important thing to mention here is that the order /instructions should be very clear. Example: Buy 100 shares of XYZ Co. for a price of Rs. 140/- or less. Then the broker will act according to your transactions and place an order for the shares at the price mentioned or an even better price if available. The broker will issue an order confirmation slip to the investor.

4. Execution of the Order: Once the broker receives the order from the investor, he executes it. Within 24 hours of this, the broker must issue a Contract Note. This document contains all the information about the transactions, like the number of shares transacted, the price, date and time of the transaction,

brokerage amount, etc. Contract Note is an important document. In the case of a legal dispute, it is evidence of the transaction. It also contains the Unique Order Code assigned to it by the stock exchange.

5 Settlement: Under this step securities are transferred from the buyer to the seller and the funds transferred from seller to buyer through their demat account. Here too the broker will deal with the transfer. There are two types of settlements.

a) **Spot settlement:** Under this exchange of funds take place immediately and the settlement follows the T+2 patterns. For example a transaction occurring on Monday will be settled by Wednesday (by the second working day)**.**

b) **Forward Settlement:** Under this settlement traders decide to settle the transaction on some future date. It means settlement will take place on some future date. It can be T + 5 or T + 7, etc.

Source: https://www.toppr.com/guides/business-studies/financial-markets/stock-exchange/

2.13.   Scrip Traded on Stock Exchanges

"BSE has grouped the stocks into various categories based on trading characteristics such as market capitalisation, trading volumes, numbers, track records, profits, dividends, shareholding patterns, corporate actions and other qualitative aspects. The classification patterns are more or less same in both the main exchanges, BSE and NSE**."**

i. Group A- Specified shares it is among the most liquid stocks and is excellent from all aspects for trading and investing purposes

ii. Group B- Group B, which houses all the stocks that do not fall into any of the above categories. The 'B' counter sees normal volumes and traded are settled under the rolling system. B1 is ranked higher than B2 categories

iii. Group C- Odd lots and permitted shares

iv. Group F- Debt market (Fixed income securities)

v. Group G- Government Securities

vi. Group S' grade companies are small one, typically those with turnovers of Rs 5 crore and tangible assets of Rs 3 crore. They have low liquidity on the bourses. Due to lower volumes, these stocks may also see frenzied price movements

vii. 'Z' category are those which fail to comply with the exchange's listing requirements or may have failed to redress investor complaints

Source : DK Aggarwal, Chairman and MD, SMC Investments and Advisors' Know your Script before Investing' Economic Times Dated 12 Oct.2019

2.14.   Compulsory Rolling Settlements: It means crediting funds and debiting securities in the account of seller of securities and crediting securities and debiting funds in the account of buyer of securities or simply clearance of traded securities with in predetermined series of days. The reason behind is to settle the transaction soon after it occurs between buyer and seller of securities, rather than designated day of each month. Most of securities transactions are settled on a rolling basis i.e. (T+1), means next working day after execution of trade.

2.15. Listing of Securities: The scrip trading of a company is possible when it is listed in a specific recognized stock exchange. Prime motive of listing of securities is providing them marketability, liquidity and transferability. A company desirous of listing its securities shall be required to file an application in the prescribed format, with the Exchange in which its securities will be traded by complying legal provisions framed by SEBI and concerned exchange.

Merits of listing

i. General public gets information on daily basis about the price and worth of scrip of a company.
ii. Listing ensures best market price of securities on the basis of market forces.
iii. Listed securities can be traded at any time during business hours of exchange.
iv. Listed companies compulsorily have to publish their financial results on quarterly basis and submit to exchange.
v. Listing provides free transferability of securities.

Listing Criterion: The following are the conditions which must be fulfilled by a company before it goes for listing its securities in the recognized stock exchange

(a) Minimum Issued Capital and Minimum Public Offer*:* The minimum issued capital of the company must be Rs. 3 crore of which at least Rs. 1.80 crore in face value must be offered to the general public.

(b) Minimum number of shareholders*:* There must be at least five public shareholders for every Rs. 1 lakh of fresh public issue of capital and ten public shareholders for every Rs. 1 lakh of offer for sale of the existing capital. The rules are different in case of investment companies.

(c) Payment of interest on excess application money*:* The companies are obliged to pay interest on excess application money at the rates ranging from 4 per cent to 15 per cent depending on the delay beyond 10 weeks from the date of closure of the subscription list.

(d) Listing on more than one exchange and on regional exchanges*:* Every company with paid-up capital of more than Rs. 5 crore has to get itself listed on more than one stock exchange, including compulsory listing on regional stock exchange.

(e) Compulsory provisions in the articles of association*:* A company applying for listing on a recognized stock exchange must satisfy the stock exchange that in addition to other matters, its articles of association provide for the following:

(i) that the company shall use a common form of transfer,

(ii) that the fully paid shares will be free from all lien,

(iii) in the case of partly paid shares, the company's lien, if any, will be restricted to money called or payable at a fixed time in respect of such shares,

(iv) that any amount paid-up in advance of calls on any share may carry interest but shall not entitle the holder of the share to participate in respect thereof, in a dividend subsequently declared,

(v) that there will be no forfeiture of unclaimed dividends before the claim becomes barred by law, and

(vi) that option or right to call of shares shall not be given to any person except with the sanction of the company in general meeting.

2.16.   Security Exchange Board of India (SEBI)

With the growth in the dealings of stock markets, a number of malpractices also started in stock markets such as price rigging, an unofficial premium on new issue, delay in delivery of shares, violation of rules and regulations of stock exchange and listing requirements. Due to these malpractices the customers started losing confidence and faith in the stock exchange. So government of India decided to set up an agency or regulatory body known as Securities Exchange Board of India (SEBI) in 1988 to regulate the functions of securities market. SEBI promotes orderly and healthy development in the stock market but initially SEBI was not able to exercise complete control over the stock market transactions. It was left as a watch dog to observe the activities but was found ineffective in regulating and controlling them. As a result in May 1992, SEBI was granted legal status. Since then SEBI is an autonomous/statutory body to balance the twin objectives of investor protection and market development. It has formulated new rules and regulations to foster capital market development. Monitoring and surveillance have been put in place in the stock exchanges and strengthened in the course of time.

Objectives of SEBI: According to the preamble of SEBI its three main objectives are: 1) To protect and promote the interest of the investors in securities 2) To promote the development of the securities market 3) To regulate the securities market

Functions of SEBI: SEBI performs primarily tri functions, namely, protective, developmental and regulatory functions.

1. Protective Functions: These functions are concerned to safety of investment and protecting the interest of investors:

(i) It Checks Price Rigging: Price rigging refers to manipulating the prices of securities with the main objective of inflating or depressing the market price of securities. SEBI prohibits such practice because this can defraud and cheat the investors.

(ii) It Prohibits Insider trading: Insider is any person connected with the company such as directors, promoters etc. These insiders have sensitive information which affects the prices of the securities. This information is not available to people at large but the insiders get this privileged information by working inside the company and if they use this information to make profit, then it is known as insider trading, e.g., the directors of a company may know that company will issue Bonus shares to its shareholders at the end of year and they purchase shares from market to make profit with bonus issue. This is known as insider trading. SEBI keeps a strict check when insiders are buying securities of the company and takes strict action on insider trading.

(iii) SEBI prohibits fraudulent and Unfair Trade Practices: SEBI does not allow the companies to make misleading statements which are likely to induce the sale or purchase of securities by any other person.

(iv) SEBI undertakes steps to educate investors so that they are able to evaluate the securities of various companies and select the most profitable securities.

(v) SEBI promotes fair practices and code of conduct in security market by taking following steps:

   (a) SEBI has issued guidelines to protect the interest of debenture-holders wherein companies cannot change terms in mid course.

   (b) SEBI is empowered to investigate cases of insider trading and has provisions for stiff fine and imprisonment.

2. Developmental Functions: SEBI focuses on the following developmental functions to make capital market more vibrant and efficient:

   i. SEBI promotes training of participants of capital market to enhance their skills.

   ii. SEBI has allowed on line buying and selling of securities through registered stock brokers.

   iii. To reduce the cost of issue of securities underwriting is made optional.

   (c) Initial public offer of primary market is allowed through stock exchange.

3. Regulatory Functions: Being a regulator of capital market in our country SEBI has framed plethora of guidelines for efficient working of capital market. Some of the major regulatory functions are mentioned below**:**

   (i) SEBI has framed rules and regulations and a code of conduct to regulate the intermediaries such as merchant bankers, brokers, underwriters, etc.

   (ii) These intermediaries have been brought under the regulatory purview and private placement has been made more restrictive.

   (iii) SEBI registers and regulates the working of stock brokers, sub-brokers, share transfer agents, trustees, merchant bankers and all those who are associated with stock exchange in any manner.

   (iv) SEBI registers and regulates the working of mutual funds etc.

   (v) SEBI regulates takeover of the companies.

   (vi) SEBI conducts inquiries and audit of stock exchanges.

2.17.   Role of SEBI

SEBI acts as a watchdog for all the capital market participants and its main purpose is to provide such an environment for the financial market enthusiasts that facilitate efficient and smooth working of the

securities market. To make this happen, it ensures that the three main participants of the financial market are taken care of, i.e. issuers of securities, investor, and financial intermediaries.

Issuers of securities: These are entities in the corporate field that raise funds from various sources in the market. SEBI makes sure that they get a healthy and transparent environment for their needs.

Investor: Investors are the ones who keep the markets active. SEBI is responsible for maintaining an environment that is free from malpractices to restore the confidence of general public who invest their hard earned money in the markets.

Financial Intermediaries: These are the people who act as middlemen between the issuers and investors. They make the financial transactions smooth and safe.

Powers of SEBI

SEBI, being apex authority over capital markets in India is vested with vast powers with regard to the following matters:

(a) SEBI has power to inspect any documents of listed company if it has indulged in prohibited activities (insider trading, fraudulent and unfair trade practices) pertinent to securities.

(b) SEBI has power to grant, renew and cancel registration to practice as stockbrokers, sub brokers, share transfer agents, merchant bankers, underwriters, and others intermediaries participating in capital market.

(c) SEBI has powers of a civil court for trying a suit in respect of matters related to capital market.

(d) It has power to register and regulate the functioning of collective investment schemes and mutual funds.

(e) Board has power to promote investors education and training of intermediaries in the capital market.

(f) Board has power to inspect, audit and order an enquiry of the stock exchanges and capital market participants and intermediaries.

2.18.   Capital Market Intermediaries:

Capital market intermediaries are those institutions which act as a middleman in connecting the surplus sector to the deficit sector. Capital market intermediaries ensure the smooth functioning of capital markets through undertaking various roles and responsibilities. Some market intermediaries act in individual capacity while others as organization to bring together surplus sector and deficit sector. Intermediaries of Indian capital market are Brokers, Fund managers, Merchant bankers, Credit rating agencies, Regulatory bodies and Stock depositories and clearing houses

Stock-brokers/Sub-brokers: SEBI regulation define Stock broker as a member of registered stock exchange and a sub-broker as an agent of the stock broker or a person who assists the investors to deal with the stock broker. Registration with SEBI is mandatory for both. Stock brokers are required to maintain book of accounts as stipulated by Board.

Fund/Portfolio Managers: "SEBI regulations define fund manager as any person who pursuant to a contract or agreement with a client, advises or directs or undertakes on behalf of the client, the management or administration of a portfolio of securities or the funds of clients." They construct, evaluate and revise the portfolio of securities on behalf of the client. A fund manager must be registered with Board and shall follow laid down code of conduct. "Every fund manage shall furnish to the SEBI half yearly unaudited financial results when required with a view to monitor the capital adequacy of the portfolio manager."

Credit Rating Agencies: The assessment of the capacity of an issuer of debt securities like debentures/bonds/public deposits by credit agency like (ICRA, CRISIL, CARE etc) to pay interest charges and repayment of debt according to terms and conditions of issue of debt is called credit rating. Debt issuing company is assessed on the basis of its both qualitative and quantitative aspects by rating agency to judge its relative strength and capacity to honor debts obligations as mentioned in debt instrument. Debt issuer rated, is given code numbers by rating agency which are easily understandable by investors. Rating express an opinion to buy, hold or sell security of a company and does not amount to such a recommendation. Further, credit rating being financial advisory service is fee based.

Merchant Bankers: A Merchant bank is an institution which provides a number of services on fee basis including looking after pre-issue and post issue of securities, underwriting, credit syndication, financial advisory, project counseling etc. It is mandatory that all public issues should be managed by merchant banker acting as lead manager. A merchant banker has to follow the guidelines issued by SEBI regarding their qualification, capital adequacy, code of conduct etc.

Underwriters: Underwriters are persons who assured the issuing companies that they will buy the securities in case these are not subscribed by whom to offer. Banks and financial institutions, merchant bankers, members of the stock exchanges, EXIM bank etc act as underwriters. Underwriters do not buy and sell securities rather they stand as back-up supporters. For this assurance they charge fees named as underwriting commission depend upon the nature of securities.

Regulatory Bodies: These are the institutions which control and regulates the buying and selling of securities in capital market in transparent and fair manner by framing rules &regulations and include SEBI, Specific Stock Exchange, Registrar of Companies, RBI (for FDI and FII).

2.19. Depositories

The word depository means 'a centralized place where securities are kept and recorded in the books on behalf of the investors either in paper or in electric form. Depository can be defined as "An institution which transfers the ownership of securities in electronic mode on behalf of its members" As a consequences of implementation of capital market reforms GOI enacted the Depositories Act in 1996. At present National Securities Depository Limited (NSDL) and Central Depository Services (India) Limited are providers of depository services in India.

Objectives of Depository: A depository enables the capital market to achieve the following objectives:
i) By creating a system for the central handling of securities to reduce time in their transfer,

ii) Avoid the risk of settlement of securities,

iii) Reduce cost of transaction for the investor,

iv) Enhance liquidity and efficiency,

v) Promote the country's competitiveness by complying with global standard.

Constituents of Depository System: There are four players in the depository system namely depository participant, investor, issuer and depository.

Depository Participant: A DP,   generally a bank is an agent of depository. An investor who buys or sells securities and wants to avail depository services he has to open D Mat. Account with DP. It is just like to open any other account in a bank. A D Mat. Account keeps the record of securities of investor. A DP must be registered with SEBI and it could be a bank financial institution clearing corporation etc. List of DPs can be seen on specified depository portal.

Investor/Beneficial owner: Investor/ beneficial owner is the real owner of the securities who has lodged his scrip with the depository in the form of book entry.

Issuer: An issuer is a company that issues securities and maintains record of registered owners of scrip with depositories. As per SEBI rule every issuer whose scrip have been declared as eligible to be held in dematerialization form in a depository, shall enter into an agreement with depository and shall maintain a record of certificates of securities which have been dematerialized.

Depository: A depository (NSDL, CDSL) is a firm wherein the scrips of an investor are held in electronic form in the same way a bank holds money of its depositor. It carries out the transactions of securities by means of book entry without physical movement of securities. Depository acts as a defecto owner of scrips lodged with it for the limited purpose of transfer of ownership. All capital market and money market securities, units of mutual funds and collective investment schemes are eligible to be kept in demat form with depositories.

Clearing and Settlement Corporation: "It is a center to do trade matching and settle the funds and exchange securities/ settles the transfer of funds between the buyer and seller of securities".

Flow Chart of Dematerialisation Process
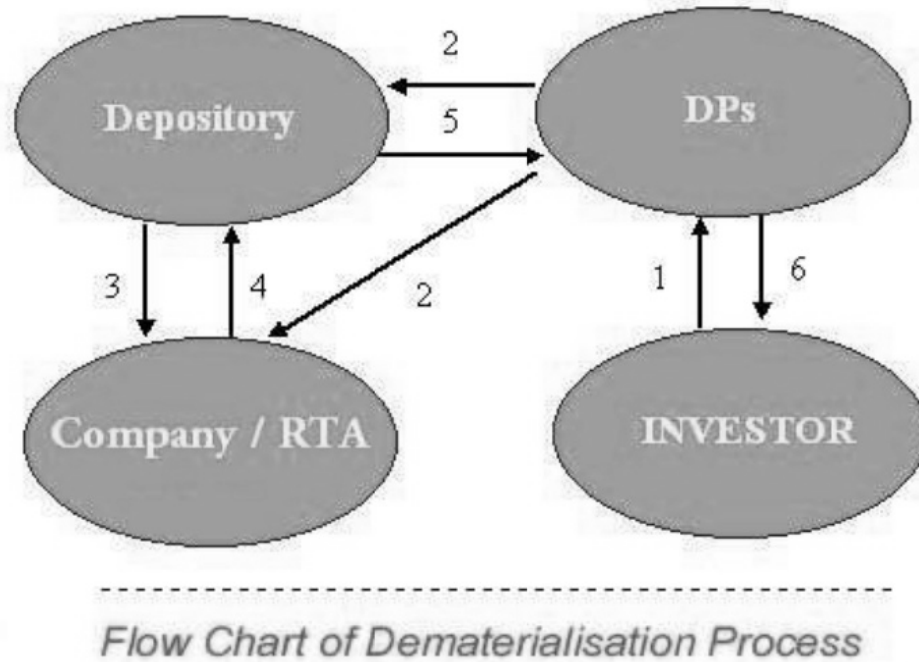
Source:https://www.google.com/search?q=depository++chart&tbm=isch&hl=en&chips=q:depository++
chart,online_chips:dematerialisation&hl=en&ved=2ahUKEwjwzbKh47roAhWikeYKHSWxAncQ

Procedure in the Depository system

"When the shares are handed over to the **depository system**, the shares get immobilized as they are no more with the shareholder in physical form. The stock exchange concerned where the shares are listed will come out with a notification for the dematerialization of shares. The shareholder will obtain the dematerialization request form from the Depository Participant. This form will contain details about the name of the company, folio number and the distinctive number of the shares which are given for dematerialization. The form will be signed by either the single owner if it is held so or by joint owners, when they are held jointly. When the DP hands over the securities to the depository, the securities will be sent to Share Registrar who will register the depository name and the particulars of shares. But, before doing this, the ownership of the securities should be verified with the company and hence, this procedure will take some time. In case the signature in the requisition form does not tally with the specimen signature held by the company, then the request for dematerialization will be rejected as it amounts to bad delivery. In the last stage, the Depository will inform the DP the details of shares registered in the name of the shareholder concerned. On this basis, the DP will send the Statement of Account to the customer shareholder".

Self Assessment Questions

1. Discuss the relationship between primary market and secondary market.

2. Explain the various methods of floating of new issue.

3. Describe the different types of investors in the primary market.

4. Write in brief about the various participant of capital market?

5. Describe the functions and role of SEBI.

6. Highlight the modus operandi of 'depository system '

7. Write notes on: Book Building, Listing of securities, Merchant Bankers, Initial Public Offer, Pricing of new issue

Suggested Book Readings:

1. Security Analysis and Portfolio Management:- By Punithavathy Pandian. Vikas Publishing House PVT. LTD.

2. Security Analysis and Portfolio Management:- By S Sasidharan and Alex K Mathews. Tata McGraw Hill Education Private Limited.

3. Security Analysis and Portfolio Management:- By S Kelvin. PHI Learning Private Limited.

4. Security Analysis and Portfolio Management:- By Donald E Fisher, Ronlad J Jordon and A K Pradhan. Pearson IN.

UNIT – 3

Valuation of Securities and Fundamental Analysis

Objectives

The objectives of this unit are to

● understand basics of valuation of bonds.

● explain the valuation model of equity shares, preference shares, future and option

● Describe the fundamental analysis i.e. economic, industry and company.

Introduction:

Securities valuation means determining fair value of financial instruments by investors/traders before buy or sell viz. equity shares, preference shares, debentures, bonds, future and option of corporate organizations, government and semi government undertakings and financial institutions. Security valuation is important to decide the portfolio of an investor. All investment decisions are to be made on a scientific analysis of the right price of a security. For this purpose, he/she creates a portfolio consisting of fixed income (risk free and less risky) bearing securities and risky securities. Hence the portfolio may consist of bonds/debentures, preference shares, equity shares, options, futures etc. This is why knowledge of the valuing the specific types of securities are required. As a standard rule investors should buy underpriced securities and sell overpriced securities. Hence, fair pricing of securities is an important aspect of trading. Generally, four types of valuation models of securities are used by analysts namely (i) Book value(ii) Liquidating value (iii) Intrinsic value (iv) Replacement value as compared to market price.

3.1. Valuation of Bonds and Debentures

A bond/debenture is issued by business house or government providing a fixed income of money in the form of interest to the holder on a specified date till its maturity. A bond is a bearer instrument so can be transferred without any transfer deed. Bonds issued by government or semi government bodies are called government or gilt edge securities. These are risk free assets. The debentures and bonds are almost similar. The difference among the two is of non financial nature. As per companies act, "Debenture is a written instrument acknowledging a debt to the company. It includes debenture stock, bonds and any other securities of a company whether constituting a charge on the assets of a company or not."

3.2. Terminology in Bonds Valuation:

Par Value: The face value of the bond/debenture is called its par value. Par value is the amount at which firm sold the bond to investors and repay the same on the date of maturity. The par value of bond

may be Rs. 100, 1000, 5000, 10000 and so on. If the bond/debenture is sold less than its par value, it is known discount and above par value it is called premium.

Coupon Rate: The rate at which interest is computed on the par value of bond/debenture and payable annually/semi-annually or as per the terms and conditions mentioned in the instrument to the holder.

Maturity Period: It indicates the date or period at the end of which the principal will be repaid to holder. The maturity can be for long period or short period. The maturity period may range from one year to 10 years.

Current Yield: It is the annual earning/income which may be in the form of dividend on shares or interest on debt securities, expressed in percentage on the current market price of share or bond.

Yield to Maturity: Yield to maturity is a discount rate by which future cash flows from a bond are discounted to find their present value which is equal to the current price of the bond. It is the rate of return that investors expect to earn if the bond is kept till maturity. YTM is based on the three assumptions:

- Investor is holding the bond till maturity.
- The interim coupon rate is reinvested at the YTM rate.
- No default in payment of coupon or maturity value.

Yield to maturity depends upon time value of money that means a rupee received today is more valuable than a rupee received tomorrow. It depends on the discounting principle. The future value and present value are as follows:

Future value= Present value $(1+ \text{interest rate})^t$

t represents the number of years for which the money is invested.

If hundred rupees are put in saving bank account at 12% for one year, the future value of money will be:

Future Value= Rs.100 (1+.12)

$\qquad$ =100*1.12=112

Present Value of money can be calculated by reversing the formula.

Present value*$(1+\text{interest rate})^t$= Future value

Present value= future value/$(1+ \text{interest rate})^t$

Today's worth of Rs 1000 to be received after a year at the 10 percent interest will be

Present value= Rs.1000/(1+.1)

$\qquad$ =Rs. 1000/1.1

$\qquad$ = Rs. 909.09

3.3. Key Points to Understand Bond Value Behavior

a) Required Rate of Return and Bond Value

i) When interest rate is equal to required rate of return, then value of bond is equal to par value. ii) When interest rate is higher than required rate of return, then value of bond would be more than par value.iii) When interest rate is lower than required rate of return, then value of bond will be less than par value.

b)Time to Maturity and Bond Value: i) When interest rate is equal to required rate of return and change in time period (whatever may be maturity period) value of bond is equal to par value. ii) When interest rate is higher than required rate of return the value of bond increases when time period to maturity increases. iii) When interest rate is lower than required rate of return value of bond decreases when time to maturity increases and vice-versa.

3.4. Valuation Models

Bonds are classified into two categories namely irredeemable/perpetual and redeemable. The value of depends upon three factors i.e coupon rate, year to maturity and the expected yield to maturity/required rate of return**.**

a) Valuation of Redeemable Bonds: These bonds are repayable by issuer after a fixed period of time. The value of these bonds is the present value of future cash inflows (periodical interest payments and par value at maturity) paid by issuer till their maturity. The following formula is used to determine the value of bond:

$$V_d = R_1(1+K_d)^{-1} + R_2(1+K_d)^{-2} + R_3(1+K_d)^{-3} \ldots\ldots\ldots + R_n(1+K_d)^{-n} + M_n(1+K_d)^{-n}$$

$$= \sum R_t(1+K_d)^{-t} + M_n(1+K_d)^{-n}$$

V_d = Value of bond or debt

R_1, R_2…. = Annual interest in period 1,2,3……so on

K_d= Required rate of return

M= Maturity value of bond

n= Number of years to maturity

As the n goes larger, it becomes difficult to calculate through time value of money formula. To compute the value we take the help of Present Value Interest Factor Annuity table. Mathematically:

V_d= (I x PVIFA kd,n + (M x PVIF kd,n)

PVIFA ₌ Present value interest factor annuity,

PVIF ₌ Present value interest factor

 kd= Required rate of return n= Number of years to maturity M= Maturity value of bond

Example Dinesh want to buy 7% Rs. 100 bond redeemable at par after 5 years. The cost of bond for Dinesh is 10%. Suggest him to buy or not that bond.

 Solution:

$V_d = R_1(1+K_d)^{-1} + R_2(1+K_d)^{-2} + R_3(1+K_d)^{-3} \ldots\ldots\ldots + R_n(1+K_d)^{-n} + M_n(1+K_d)^{-n}$

$\qquad = 7(1.1)^{-1} + 7(1.1)^{-2} + 7(1.1)^{-3} + 7(1.1)^{-4} + 7(1.1)^{-5} + 100(1.1)^{-5}$

$\qquad = 6.363 + 5.782 + 5.257 + 4.781 + 4.347 + 62.1$

$\qquad = 88.63$ .He should be pay Rs. 88.63 the fair value of the bond.

b) Valuation of Irredeemable Bonds: These are the bonds without maturity period and are not repaid till closing of the firm.. Formula to value these bonds is:.

$$V_d = I/K_d$$

Where, V_d = Value of bond or debt

$\qquad\qquad K_d$ = Required rate of return.

$\qquad\qquad$ I= Annual interest

ILLUSTRATION 2: XYZ has issued 14% perpetual bonds of Rs 1000 each. Determine the value of bond if cost of debt is 15%.

Solution:

$\qquad V_d = R/K_d$

$\qquad\quad = 140/0.15$

$\qquad\quad = $ Rs. 933

c) Bond Value with Semi Annual Interest Rates: If interest on bond/ debenture is paid semi annually, the bond valuation is little bit modified:

- Yearly interest is divided by 2 to get half yearly interest.

- Maturity period is multiplied by 2 to know number of half yearly periods.

- The required rate of return is divided by 2 to know discount rate applied to half yearly periods.

d) Valuation of Zero Coupon/ Deep Discount Bonds: Zero Coupon or deep discount bonds does not carry any interest but is sold to the investor at heavy discount from its maturity value. IDBI issued such bonds in the Indian market for the first time. The valuation of deep discount bond can be made in the same manner as that of the ordinary bond. Remember that there shall be only one cash flow at the time of maturity. Thus the value of DDB may be taken as present value of the future cashflow discounted at required rate of return.

Mathematically $V_{ddb} = FV/(1+r)^n$

Where, V_{ddb} = Value of deep discount bond

FV = Face value of bond at the time of maturity

r = Required rate of return

n = Number of years to maturity

Example: Seena Vora Ltd. issued Zero coupon bonds for a period of 20 years with maturity value of Rs. One lakh. If the required rate of return is 10% , determine its value.

V_{ddb} = $FV/(1+r)^n$

$$= 100000/(1+.10)^{20}$$

$$= 100000(0.14864)$$

$$= Rs. 14864$$

3.5.   Valuation of Preference Share

Once features of bonds and equities are combined it become hybrid security and called preference shares.   The holders of these shares have two priority rights over equity shareholders in receiving dividends at fixed rate and repayment of their capital in case company is being liquidated. Risk in preference share is more than debt but less than equity shares. The return on preference shares is greater than the bonds.

a) Value of Redeemable Preference: These preference shares are issued with a fixed period of time and repayment is made by the issuer company on their maturity. Formula to find out their value is:

$$V_p = d(1+k_p)^{-1} + d(1+k_p)^{-2}+.....+ d(1+k_p)^{-n} + P_n(1+k_p)^{-n}$$

Where, V_p = Value of preference share

d = Annual dividend per preference share

P_n = Maturity or redemption price of preference share

k_p = Required rate of return/cost of preference share

Alternatively Short Formula

V_p= (P0 **x** PVIFA kp.n + (M **x** PVIF kp,n)

PVIFA = Present value interest factor annuity,

PVIF = Present value interest factor

P0= Dividend on preference share

kp= Required rate of return/cost of preference share

n= Number of years to maturity $_M$= Maturity value of preference share

Example: XY Ltd.issued,7% preference share of Rs. 10,000 at face value repayable after 5 years from the date of issue. Determine the value of share if 8% is the minimum required rate of return on it.

Solution: $V_p = d(1+k_p)^{-1} + d(1+k_p)^{-2} + ... + d(1+k_p)^{-n} + P_n(1+k_p)^{-n}$

$= 700/(1.08)^{-1} + 700/(1.08)^{-2} + 700/(1.08)^{-3} + 700/(1.08)^{-4} + 700/(1.08)^{-5} + 10000/(1.08)^{-5}$

$= 700(.926) + 700(0.857) + 700(.794) + 700(.735) + 700(.681) + 10000(.681)$

$= 648.2 + 599.9 + 555.8 + 514.5 + 476.7 + 6810 = 9605.1$

Total present value of cash flow or value of preference share Rs.9605.1

b) Value Of Irredeemable Preference Share: .: These preference shares are without maturity period and are not repaid till closing of the firm.. Formula to value these bonds is:.

$$V_p = D/K_p$$

Where, V_d = Value of preference share

K_p = Required rate of return.

D= Annual dividend per share

Example: Reena wants to invest in perpetual, 9% Preference Share of Rs. 5,000 of X Ltd. Find the value of share if required rate of return is 10%.

Solution: $V_p = D/K_p$

$= 450/(0.10) = $ Rs. 4500.

3.6.   Equity Share Valuation

People invest in equity shares in the expectations of dividend and increase in share price/capital gain. Determining equity value is different from bonds and preference stock as cash flow from them is known in the form of fixed interest and dividends respectively. However, dividends on equity shares/cash flows are uncertain but holders of equity shares expect growth in earnings/dividends till they hold. This is why equity shares valuation approaches follow capitalization of dividend and capitalization of earnings methods.

I) Dividend Capitalization Approach: The value of equity share is determined by the cash flows expected by investors and the risk associated with such cash flows. The investor expects dividends during holding period and capital gain on sale of shares. Thus the value of equity stock is the present value of a streams of dividends expected during holding period. The different valuation models are as follows:

a) Single Period Valuation: The model is based on the assumption the investors buy and hold equity shares only for one year. In this case the value of share will be the present value of dividend expected after one year and the present value of expected sale price. Symbolically,

$$P_0 = \{D_1/(1+K_e) + P_1(1+K_e)\}$$

Where, P_0 = Current value of the share

D_1 = Expected dividend at the end of year 1.

P_1 = Expected sale price of share at the end of year 1.

K_e = Required rate of return on equity.

b) N-Period Valuation : Here the assumption is that investors buy and hold shares for n number of year. In such a case the value of share will be computed by following formula:

$$P_0 = D_1/(1+K_e) + D_2/(1+K_e)^2 + \ldots\ldots\ldots + D_n/(1+K_e)^n + P_n(1+K_e)^n$$

P_0 = Current value of equity share

$D_{1, D2, Dn}$ = Expected dividend at the end of n number of years .

P_n = Expected selling price at end of n years.

K_e = Required rate of return on equity

If the expected dividend in different periods is **constant**, the value of shares can be calculated using compound interest and annuity table.

$P_0 = D(PVIFA_{i,n}) + P_n(PVIF_{i,n})$

D = Dividend at the end of year/annual dividend

PVIFA=Present value interest factor of Annuity,

PVIF= present value interest factor

Y is interested to buy and hold a share for ten years. He is expecting a dividend of Rs. 10 yearly for holding period and sell it at Rs. 110 after 10 years. If the cost of equity is 12% compute the value of share.

$$P_0 = D(ADF_{i,n}) + P_n(DF_{i,n})$$

$$= 10(ADF_{12,10}) + 110(DF_{12,10})$$

$$= 10(5.650) + 110(0.322)$$

$$= 56.50 + 35.42 = \text{Rs. } 91.92$$

II) Dividend Valuation Model: The assumption of this basic model is that investors buy equity shares with the intention of holding them forever. The value of equity stock is the present value of a stream of dividends expected over an infinite period.

$$P_0 = \sum\{D_t/(1+k_e)^t\}$$

Where, P_0 = price of the share

D_t = dividend to be received in the years

K_e = Required rate of return

t= time period

Some variation in the Dividend Valuation Model

a) No/Zero Growth Model: It is based on the assumption that dividends are not expected to grow or will remain constant. The value of the share is the present value of perpetuity of dividends. Formula to determine the value of share is

$P_0 = D/K_e$ Where

D= Dividend per Share,   Ke = Cost of Equity/required rate of return

b) Constant Growth Model: This model assumes that dividends would grow at a constant rate but growth rate is always less than cost of equity/required rate of return.

$$P_0 = D_1 \div (K_e - g)$$
$$= D_0(1+g) \div (K_e - g)$$

Where, D_0= current dividend

D_1 = dividend at the end of year

K_e = required rate of return

g= Expected percent growth in dividend

Example: Ria & Co. paid a dividend of Rs. 3 as last year's dividend and is expected to grow at 5% forever. Compute the value of stock assuming required rate of return is 16%.

$P_0 = D_1/(K_e - g)$

$= 3(1+.05) \div (0.16-0.05)$

$= 3.15 \div 0.11$ or   Rs. 28.63

c) Variable Growth Model: The assumptions of zero and constant growth model in previous paragraphs seem untrue for fast growing firms. Further growth of the firm is different in different phases of economy. Hence, variable growth model of dividend is appropriate to value equity share. It requires four steps to be followed to arrive the value of equity stock. These are:

1. Compute the present value of expected dividends at the end of each year during the supernormal growth period.

2. Compute the present value of dividends expected during the initial growth period.

3. Determine the present value of equity share at the end of the initial growth period.

4. Add the present value computed in step 2 and 3 to arrive value of equity stock.

Example "XYZ company declared a dividend of Rs. 2 per share. Company expects that the dividend will grow at a 12% growth rate (g1) for the next four years. At the end of 4 years the dividends growth rate shows declining trend at 6% (g2) for the foreseeable future. Determine value of stock assuming 16% as required rate of return".

Step1.Calculation of cash value of dividend at the end of each year

Year	D0(Rs)	FVIF@12%	D1 (Rs)
1	4	1.120	4.48
2	4	1.254	5.016
3	4	1.405	5.620
4	4	1.574	6.296

Step 2.

Year	D1	PVIF@16%	Present Value
1	4.48	.862	3.862
2	5.016	.743	3.727
3	5.620	.641	3.602
4	6.296	.552	3.475

Step 3. Value of stock at the end of initial growth period i.e. 4 year. Before applying formula we need to find expected dividend for the 5th year with normal growth rate (g2) D5 =D4 $\mathbf{x}$(1+g2) or D5 = 6.296 $\mathbf{x}$ (1.06) **or   6.673**

Now P4 = D5 ÷ (Ke-g2) OR   = 6.673÷ 0.16-0.06 = Rs. 66.73. Now Rs. **66.73** needs to be converted into present value

=P4 $\mathbf{x}$ PVIF Ke. 4 years = 66.73 x PVIF 16%, 4years = 66.73 x 0.552 =Rs.**36.83**

Step 4. Add Present values found in step 2 and 3

P0= 14.66 + 36.83 Rs**. 51.50"**

III) Earnings Capitalization Model: According to this model price of share is dependent on the dividend payout ratio. Market value of the share is equal to the present value of infinite stream of dividends.

P = E (1–b) ÷ k-b.r **or** 'g'

Where,   P= Price of shares

               E= Earnings per share

b= Retention ratio

k = Cost of equity capital

b.r = Growth rate × rate of return on investment of an all-equity firm..

Example: From the following information compute the market price of share

Required rate of return Ke = 15%

EPS = Rs. 10

Return on investment 'r' = 14%

Retention ratio: Case A= 40%

Case A P = E (1–b) ÷ k-b.r = 10(1-.40) ÷.15-.40 ×.14 = Rs. 39.94

3.7.   Option: Of several variants in derivatives option is being preferred by investors for investment, hedging and speculative purposes. A option contract gives the buyer of the option(option holder) the right to buy or sell specified quantity of a security at a pre-determined price and on predetermined date after paying a amount called premium to option writer, where as the seller of the option(option writer) has the obligation to sell or buy specified quantity of a security at a pre-determined price and on predetermined date if the option holder exercise his/her right. Option is the type of derivative used by investor to protect the investment from risk. Option is a type of derivative where the loss of option holder is limited whereas the potential for profits are unlimited where as profit of the option writer is limited to the amount of premium received whereas his losses are unlimited.

Black and Schole Option Pricing Model (BSOPM):   The option price is the upfront fee (option premium) paid by the option buyer (option holder) to option seller(writer)**.** Finding the price of option is called option valuation. Black and Schole Option Pricing Model (BSOPM) is a mathematical model for pricing the option and most suitable to the modern capital markets. The factors affecting the price of the option as per (BSOPM) are spot price of the underlying assets, the exercise price, volatility of the underlying asset, risk free interest rate and time to maturity. The model is used to determine the price of European call option which means that option can be exercised on the expiration date.

The model is based on the following assumption**s:**

i) The option is European i.e. it can be exercised at maturity

ii) There are continuous changes in the prices of option

iii) There are no transaction costs and taxes

iv) The model is based on the normal distribution in the long term

v) No dividend will be paid during to contract period.

vi) There will be no restriction on short selling.

 vii)The investor can borrow or lend at the risk free rate of return.

The formula for computing option pricing under BSM model is:

Call option premium $C = S.N(d_1) - Ke^{-rt}N(d_2)$

Put option premium $P = K/e^{rt} +$ Value of Call-Spot price

Where

$d_1 = \frac{\ln(S/K) + (r + .5\sigma^2)\,t}{\sigma\sqrt{t}}$

$d_2 = d_1 - \sigma\sqrt{t}$ Where,

C = Price of the call option

P = Price of put option

S = Spot price of the underlying asset

K = exercise price of underlying asset

r = rate of interest

t = time to expiration

σ = volatility of underlying

$N(d_1)$ = Normal distribution function of

ln = Natural log i.e. log to the base e

Example: Following information is related to ABC Ltd. shares and call option is available on them: Current share price is Rs. 415, Option exercise price is Rs. 400, Risk free rate 5%, p.a. Time to option expiry 03 months and standard deviation of share price is 22%. Is the call option worth buying for Rs. 25?

$d_1 = \frac{\ln(S/K) + (r + .5\sigma^2)\,t}{\sigma\sqrt{t}}$

$= \frac{\ln(415/400) + \{.05 + .5(.22)^2\}.25}{.22\sqrt{.25}}$

$= \frac{.036814 + .01855}{.11}$ OR = .5033

$d_2 = d_1 - \sigma\sqrt{t}$ $= .5033 - .22\sqrt{.25}$ OR = .3933

$Nd_1 = N(.5033) = 1 - .3072 =.$ OR = .6927

$Nd_2 = N(.3933) = 1 - .3471$ OR = .6529

$C = S.N(d_1) - Ke^{-rt}N(d_2)$

$= 415(.6927) - 400e^{-(.05)(.25)}(.6529)$

$= 287.47 - 400 \times .9876(.6529)$

$= 287.47 - 257.915$

= Rs.29.55 Since market price Rs. 25 is less than Rs. 29.55, it means option is under priced, hence it is worth buying.

3.8.   Valuation of Future

Futures are derivatives wherein all terms and conditions are standardized and are traded at exchanges. Futures may be defined as standardized forwards being traded at exchanges. Future is being traded for hedging as well as speculation. The pricing of futures contract depends on the following variables:

 i) Price of underlying asset in the cash market

ii) Rate of return expected from investment in the asset

 iii) Risk free rate of interest

iv) time to maturity of future contract.

The following formula named as **cost of carry model** is used to price the future contract:

 Fo=S0 (1+r-Y)

Where S0 = Current spot price of the asset, Fo = Future price r = % financing cost per future period, Y = % Yield on investment per future period

Example: The underlying share of Reliance Energy is currently traded in the market at Rs.1000. The expected return from share is 3% per quarter. The risk free rate of borrowing and lending is 2% per quarter. The future contract period is also a quarter. What should be the price of future?

Fo=S0 (1+r-Y) = 1000(1+.02-.03)   **Or** Rs. 990

3.9.   Fundamental Analysis

Fundamental analysis is the analysis of critical factors that affect the value of stock. Profitability, growth rate and exposure of risk etc. have direct bearing on the market price of company's share. Further profitability, growth in sales etc. of a firm in turn are affected by many other factors like the economic environment in which firm operates, the industry it belongs to and company's own performance. Analysis of economy, industry and company are the components of fundamental analysis. The basic objective of fundamental analysis is to know the true /intrinsic value of stock. If the analysts commence his study from economy then industry and lastly company it is named as 'top-down approach' of fundamental analysis.

3.9.1 ECONOMY ANALYSIS:

 Economic analysis is done to know direction of economy as whole and stock market, as stock market indices are the barometer of an economy. Economic analysis is a study of general macroeconomic factors like GDP/Level of National Income, inflation, interest rates, budget and fiscal deficit, tax structure, balance of payment position, foreign investment, business cycles, infrastructure facilities, status of agriculture etc. to evaluate the security price. Investors are concerned with those variables in the economy which affect the performance of the company in which they tend to invest. Analysis of above macro economic variables would provide information about future earnings of company and pay

out of dividends/interest to investors. The following brief discussion of major factors indicates the trends in macroeconomic changes that effect the risk and return on investments:

1) **GDP:** GDP stands for total monetary value of the goods and services created in the country during a specified period. The growing GDP of a country indicates the prospects for the industrial sector and investors will be optimistic about his return whereas falling GDP signals a potential slowdown in economy and investors sentiments are negative about his return on his/her investment.

2) **Inflation:** The performance of companies is affected by Inflation. Higher rate of inflation is not favorable to business activities. Reduction in purchasing power of consumers reduces the demand of product/services resulting less production. Low rate of inflation helps to prosper business.

3) **Interest Rates:** Low rate of Interest in an economy rates encourages investment for productive activities. Contrary high rate of interest increase cost of production resulting lower profitability for business.

4) **Budget and Fiscal Deficits:** A budget provides information about government revenue and expenditure for a specified future period. A deficit budget indicates a high rate of inflation which means adverse affect on the cost of production whereas surplus budget may cause deflation. A balanced budget is highly favorable to get a good return on investment..

5) **Balance of Payment/Exchange rates**: The strength of a currency on external account can be judged by a country's balance of payment. Deficit increase on external account causes domestic currency to depreciate against major currencies resulting costly import. Business of export-import are affected by changes in the foreign exchange rate. A favorable balance of payment and stability in exchange rate increase the confidence of investors and vice-versa.

6) **Monsoon**: The economies based on agricultural activities like India having both forward and backward linkages between agriculture and industry. Prospects of many firms and industrial activities depend on performance of agriculture sector. Further prosperity of agricultural sector push up the demand for industrial goods/services creating opportunity industrial development.

7) **Foreign Investment:** Inflow of foreign capital helps the economy to grow and has a positive impact on the stock market whereas outflow of foreign capital discourage the sentiments of domestic investors, market and economy**.**

8) **Economic and political stability**: Political stability is essential for steady economic growth of a country. No economic growth is expected in a country with political turmoil. The economic policies framed to create conducive environment for trade and industry by stable government with clear vision attracts both domestic and overseas investors.

3.9.2 Industry Analysis

Industry analysis means a detailed and in depth investigation to extract information regarding problems and prospects of an industry for investment decisions. It is required as the return and risk of one industry differ from other. Further a particular industry's performance to certain extent reflects the firm's

performance. Essentially on the part of an analyst to pinpoint growth industry, which has investment prospects. The following factors are to be taken care for industry analysis:

Industry Life Cycle: An investor before making investment he is advised to look into the phase of life cycle of industry as in case of product life cycle. This is why industry life cycle is significant to an industry analyst. The following are the different phases of industry life cycle:

1. Pioneering Stage: At this stage being a relatively new product with promising demand attracts many firms to produce that lead to severe competition. Further firms make efforts to create brand name for their product. The brutal rivalry among firms changes their position in terms of sales, profit and market share. At this stage it is not easy to select firm for investment.

2. Rapid Growth Stage: The firms that thrash the competition in pioneering stage grow robustly in terms of sales, profits and market share. Technology based production process leads to quality product with low cost. Firms with high growth declare dividends during this phase. Investors are suggested to invest in this stage.

3. Maturity and Stabilization Stage. In this phase indications of technology obsolescence may emerge. Constantly technological innovation is introduced to refine production process. A close watch at industries events is required. An investor is advised to follow wait and watch principle.

4. Decline Stage. In this phase the earnings of the industry start falling and growth of industry is low even in boom period and decline at a higher rate during recession. Investors must not invest in such industry.

CLASSIFICATION OF INDUSTRY

For industry analysis an investor can classify Industry on the basis of business cycle in the following four categories::

1. Growth Industries: These industries show growing trend independent of the business cycle. The credit of growth and expansion of the industry goes to mainly innovations and new technology to do or sell something. IT, electronics, cellular phones, petro-chemicals, energy etc. falls in the category of growth industry.

2. Cyclical Industries: The profitability and growth of this type of industry are tandem with business cycle. These industries are best performer in boom phase and most suffer in recession. Fast Moving Consumer Goods (FMCG) industry shows exceptional growth in boom period but sharply decline during recession.

3. Defensive Industries: The industry which produces and sells necessities of life withstands recession and depression is named defensive industries. Investors can always buy and hold shares of defensive industries for generating income. For example food processing industry has shown stability in growth and suffer least during economic slow down

4. Cyclical-growth Industries: It is hybrid of cyclical and growth industry, i.e. cyclical and at the same time growing. "For example, the automobile industry experiences period of stagnation and decline but also grow tremendously. Technological changes and introduction of new models help the automobile industry to resume their growing path."

Porter's Five Force: Michael Porter developed a model to analyze the competitive structure of an industry. According to him five competitive forces are determinants of charisma and prosperity of an industry. These are discussed in the following lines

1. Entry of New Competitors: The entry of new firms increases the competition and reduces profitability. Accordingly if an industry faces threat of new competitors and barriers of new entry are not effective, its profit potential would be limited.

2. Rivalry Among Existing Firms: In an industry firms try to improve their market share and keep their existing share intact by competing with each other on the basis of price, quality, after sales services, warranties, promotion etc. Tough rivalry among the firms in a industry, moves and countermoves actions of firm diminish average profitability of the industry.

3. Threats of Substitutes: Availability of alternatives products reduces the average sale of industry and in turn the profitability. The substitute goods limit the profit potential of the industry.

4. Bargaining Power of Buyers: Customers/buyers bargain for high quality product/service at lower price induce competition among firms. If their position is strong, they reduce average profitability of industry.

5. Bargaining Power of Suppliers: Every industry requires supply of inputs for its production. Suppliers of input exert pressure on buying firms to raise prices of inputs, lower quality of inputs and curtail range of free services they used to offer. Powerful position of suppliers reduces the profitability of buyer industry.

3.9.3 Company Analysis

After selecting the industry for investment an investor make efforts to choose the best performing company. For example if he/she selects the IT industry then he has to select among companies such as Infosys, Tech Mahindra, Cognizant Wipro, TCS etc. For finding the best performer company among them he has to comprehend several bits of information related to the company to evaluate the current value of share. Evaluating the performance of a company on the basis of qualitative and quantitative factors is called company analysis

Qualitative Factors: Qualitative factors are non-quantifiable factors that represent certain aspects of a company's business like business model, management, corporate governance and corporate culture having a strong bearing on the value of shares.

1. Business Model: The business model provides a description of the company's operation and mode of revenue generation, nature of expenses, organized structure and its sales and marketing efforts. A review of business model reveals the possible success level of the company.

2. Management: The basic objective of management is to accomplish the objectives of the company in the interest of equity shareholders, creditors, employees, Govt and public at large. Efficient management team generates profit for the investors. An investor must see the profile of each executive of management team in terms of his employment history, ethical standards, educational background, professional experience, achievements and awards.

3. Corporate Governance: Corporate governance is a set of systems and practices put in place by a company to ensure accountability, transparency and fairness in dealings to safeguard the interests of the stakeholders. The systems and practices are defined and determined in the company's charter and by-laws as well as in corporate laws and regulations. Corporate governance includes the structure of the board of directors, financial and information transparency, stakeholders' right and corporate culture. An investor must look into the corporate governance principles are put in practice by a company or not.

4. Corporate culture: Corporate culture refers to the collective trust, value systems and processes of a company. Each company has a set of values and goals that helps to define what the business is all about. It is reflected by its employees and managers in the implementation of policies and procedures of company. A corporate culture that values employee's customers and owners and encourages leadership from everyone in the company is bound to perform well.

Quantitative Factors: The quantitative side engrosses gazing at factors that can be expressed numerically, such as company's earnings, financial leverages, operating leverages, competitive edge and production efficiency etc.

1) Earnings: A company generates income through its core operating activities and non-core activities.. Market price of share depends on the earnings of a company. Further dividend payout is based on earnings. Profit growth push up stock price but many a time the price of stock may be very high but not the earnings. The investor should try to find out the factors which bring change in the earning/income of a particular chosen company for analysis.

2) Financial Leverage: Financial leverage is the use of of long term debt with equity capital to maximize the value of the firm. A high degree of financial leverage i.e. more use of debt capital results more interest payments and ultimately it will affect the earning per share negatively. An investor must consider the capital structure of a company before investment decision

3. Operating Leverage: Total costs of a company have two components namely fixed cost and variable costs. If a firm's fixed costs are a major portion of total costs the firm is said to have a high degree of operating leverage, it means a relatively small change in sales results in a large change in returns on equity. Hence the investor should always keep in mind the operating leverage of the company in which he/she wants to invest as the firm with high degree of operating leverage is affected significantly by the cyclical decline.

4 Competitive Edge: A firm's market share, growth and stability in its annual sales are the parameters of competitive edge. Some companies of industry thrive in competition and rise to the position of

dominance. Such companies have a sizable share in the market. The competitiveness of the company can be studied with the help of:

5. Operating/Production Efficiency: Efficiency of the inputs is measured in terms of their productivity and productivity is the relationship between inputs and output of a company. A firm with stable operating ratio, also have stable revenues. Efficient use of physical resources, labor and management lead to more income from sales and in turn resulting internal fund generation

6) Analysis of Financial Statement: Financial Statements of a company comprises Income Statement, Position Statement and Fund flow/Cash flow statement. Financial statements provide the historical and current information for evaluating a company's stock. Position Statement provide an accounts of the capital structure of the company and how its long and short term assets are being financed. Income Statement reveals how the flow of funds from business operations took place between two points of time. A wise investor must scrutinize the financial statements to find out the manipulations if any through window dressing. The main techniques of financial analysis are:

1) **Comparative Financial Statements**: Comparative financial statement helps the investors to comprehend the nature and quantum of change in different items to estimate future trends of business.

2) Trend Analysis: Trend analysis is useful to forecast of various items on the basis previous years data. For example the sales of a company showing an increasing trend but profits are stagnant. In such a case the investor has to look into the cost and management efficiency of the company.

3) Fund Flow Statement: The amount of change in the funds of a company between two dates and causes thereof can be established by fund flow statement. The financial position of the company is truly known by this statement.

5) Cash Flow Statement: This statement help the investor to understand the cash inflow and outflow and reasons thereof between two dates of a company. Investors by analyzing the cash movement can reveal the factors causes reduction of cash balances in spite of increase in profits.

6) Ratio Analysis: Quantitative relationship between two variables of financial statements for the purpose of comparison is called ratio analysis. How the company has performed in past and what will be its prospects can be judged by investors by using different ratios like profitability ratios, return on investment ratios, valuation ratios, liquidity ratios, turnover ratios, leverages ratios etc.

3.10.   Estimation of Intrinsic Value

"The concept of "Intrinsic Value" is the cornerstone of Fundamental Analysis. Intrinsic value is a measure of what an asset is worth. This measure is arrived at by means of an objective calculation or complex financial model, rather than using the currently trading market price of that asset. To a fundamental analyst, the market price of a stock tends to move towards its intrinsic value. If the intrinsic value of a stock were above the current market price, the investor would purchase the stock. However, if

the investor found, through analysis that the intrinsic value of a stock was below the market price for the stock, the investor would sell the stock from their portfolio or take a short position in the stock.

All securities can be valued by calculating the present value of their future cash flows. The information needed to value a company is clearly stated in its financial statements. The Balance Sheet totals up the value of the Total Assets of a company and equates this to the value of the Total Liabilities plus the "Owner's Equity". Some simple algebra establishes that, at any point of time, the value of the "Owners' Equity" of a company equals the value of its Total Assets minus its Total Liabilities. When you divide this value by the number of common shares, you get the "Intrinsic Share Value" on a per share basis. An investor should use fundamental analysis to determine if a stock is undervalued, overvalued, or trading at fair market value.

If the investor examines all the available information about a corporation's future anticipated growth, sales figures, cost of operations and industry structure, that analysis will provide the intrinsic value of the stock. Investment analysts are the ones typically charged with trying to determine the "intrinsic value" of a stock. They want to figure out what it is really worth to investors, because its historical cost seldom reflects its actual value or its market valuation.

The two most commonly used methods for determining the intrinsic value of a firm are the "Dividend Discount Model", often called the Gordon Growth Model after the Canadian professor who developed it, and the Price/Earnings or PE model. If employed properly, both methods should produce similar intrinsic values." The techniques used to value equity shares in the previous paragraphs reflect intrinsic value only. In the same way bonds/debentures or preference shares are valued to find their intrinsic value.

https://www.investopedia.com/terms/i/intrinsicvalue.asp https://www.finpipe.com/fundamental-analysis-equity-value/

Self Assessment Questions

1. How will you assess the present value of a bond?

2. Explain the various bond valuation theorems with example.

3. Determine the price of R. 2000 zero coupon bond with an YTM of 15% and 10 years to maturity.

4. Find out the yield to maturity on 8% five year bond selling at Rs. 105.

5. Comment the significance of earnings dividend payout and required rate of return in estimating the theoretical value of share.

6. The current price of a share is Rs. 100, the required rate of return is 20% and the dividend paid on a share is Rs. 3. If the face value of share is Rs. 10, what will be the expected growth?

7. Discuss the qualitative factors that affect a company's performance.

8. Describe the factors considered to measure the health of an econmy.

9. Why industry analysis is significant for an investor?

Suggested Book Readings:

1**.** Security Analysis and Portfolio Management:- By Punithavathy Pandian. Vikas Publishing House PVT. LTD.

2. Security Analysis and Portfolio Management:- By S Sasidharan and Alex K Mathews. Tata McGraw Hill Education Private Limited.

3. Security Analysis and Portfolio Management:- By S Kelvin. PHI Learning Private Limited.

4. Security Analysis and Portfolio Management:- By Donald E Fisher, Ronlad J Jordon and A K Pradhan. Pearson IN.

UNIT – 4

Technical Analysis

Objectives

The objectives of this unit are to

● explain the stock price movements in terms of the Dow Theory and charting techniques.

● understand the impact of volume on stock price movements by using indicators and oscillators

● highlight the concept of market efficiency and its different forms.

● apply empirical test to ascertain market efficiency .

Introduction

Technical analysis is the process of identify trend reversal at an early stage to formulate trading strategies of securities. It involves the study of price behavior of securities in the past and on that basis predicating price behavior. Technical analyst make uses of market generate "data" like prices and volumes to find out the future direction of price movement. Technical analysis is widely used by day traders, market makers and even brokers to find out the day to day price movements. According to them price of security contains all sorts of information this is why they study and analyze the historical price trends and patterns. Technical analysis is based on the following assumptions:

1. Market value of scrip is decided by the interactions of supply and demand of that scrip only. Quoted price of a security embody the hopes, fears and inside information of market players. All together real and psychological factors bring change in the trend direction or cause a shift in demand and supply of security.

2. Market does not move random but it always moves in trend with small correction. Trends may be either increasing or decreasing.

3. The proverb, history repeats itself, is applicable on the stock market also. Technical analysts predict the future price of security on the basis of its historical prices.

4.1 Tools and Technique of Technical Analysis

Technical analysts use many tools like DOW theory, volume of trading, short selling, bar and candlestick charts, indicators and oscillators to predict the price behavior of securities to beat the market.

A) DOW Theory

Technical analysis finds it roots in series of articles written in the Wall Street Journal by Charles H Dow in 1884. Later on A J Nelson formalized the Dow theory for economic forecasting. Dow Theory recognize trends as primary, intermediate and short-term. Trend refers to the direction of movement in share prices. The primary trend may be increasing, decreasing or flat movement that last for a year or

two. The secondary or intermediate trends are curative movement, which may last from three weeks to three months. The primary trend may be broken up by the intermediate trend. The short term trends refers to the day to day price movements. It refers to the oscillations or fluctuations. These three types of trend can be compared to the tide, waves and ripples in the sea. A straight line drawn to connect either tops or bottoms of the share price movements is known as trend line There is a need of at least two tops and bottoms to draw the trend line. Dow explained movement of the indices of Dow Jones Averages by taking following assumptions:

1. Individual investor (buyer or seller) cannot influence the market's primary trend.

2. Market discounts everything. It means market price of the scrip reflect every change of the economy.

3. Theory is not infallible, it means this theory is not a tool to beat the market rather it provides a better
    understanding of the market.

Figure -1 Types of Trend

Trend Reversal: It describes the reverse change movement of scrip price direction. It also called violation of the trend line. Violation of trend line can be in two situations one is when scrip price intercept the rising trend line from above and other is when scrip price line intercept the falling trend line from below.

a) Primary Trend: It reveals only two market situation by depicting increasing and decreasing movements in scrip price. When scrip price shows increasing trend then it's a situation of bull market on the other hand if scrip price shows decreasing trend then it's a situation of bear market. Bull market shows three clear cut peaks and bear market shows there is clear cut lows regarding scrip price. In bull market every peak is higher than the previous one the bottom are also higher than the previous bottom. In bear market every top and bottom is lower than the previous one. In bull market describe three peaks as revival of the scrip, improvement in corporate profits of the scrip organization, speculation about

scrip price. Revival period encourage investors to buy scrip due to high expectation of the profit in the future, increase in corporate profit also increase the price and number of buyer of the scrip, speculation also increase the price of scrip. These three situations are reverse in bear market. In bear market first phase is of losing hopes, second phase is profits starts declining, third phase depicted in distress in sale of scrip. In first phase lose of hopes lead to sale of scrip, in second phase lower performance of corporate in terms of profits and dividends lead to more pressure on sale of scrip and in third phase sale of scrip is on distress level.
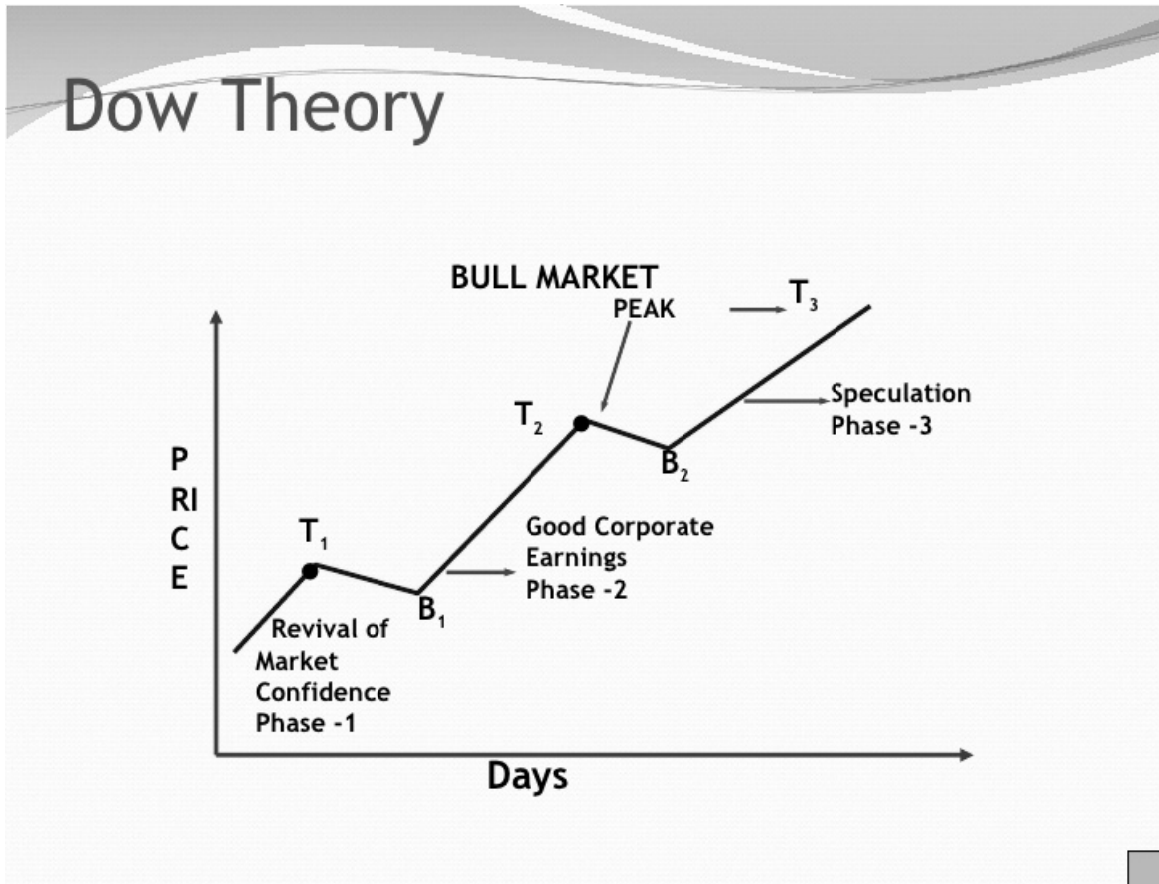
Figure-2 Bull Phase
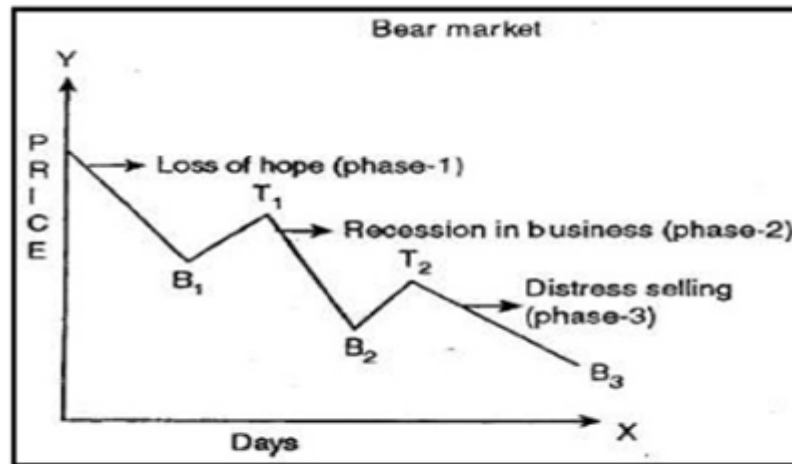
BEAR MARKET SHOWS 3 TROUGHS, EACH LOWER THAN THE OTHER

Figure-3 Bear Phase

b) **Secondary/ Intermediate Trend:** Those trends which moves against the main trends and leads to correction are considered as secondary trends. In rising market secondary trend can result in the fall of about 33-66 per cent of earlier rise. On the other hand in falling market secondary trend can result in the rise of about 33-66 percent of earlier fall.

c) Minor Trend/ Short Term/ Tertiary Trends

These are the random wriggles that occur in price movements. Minor trends are simply the daily fluctuations. The chartist plots the scrip's price.

Criticism of Dow Theory: First it is not a theory but a poor prediction from historical data. It is not able to establish between cause and effect relationship. Second it is not acceptable in its forecast. There was considerable lag between the actual turning points and those indicated by the forecast.

4.2   Support and Resistance Level

When the price of a share after reaching up a certain level falls, it is called resistance. And if the price of a stock after reaching down to a certain level rises, it is a support. The levels on continuous basis changes from support to resistance or from resistance to support. For example, if a share price hang around Rs.250 for some period, then it may rise to reach Rs.310. At this level, the price halts for some period and falls back near to its original price i.e. Rs.250 and halt and then goes upwards. In this case, Rs.250 is the support level and Rs.310 is the resistance level.
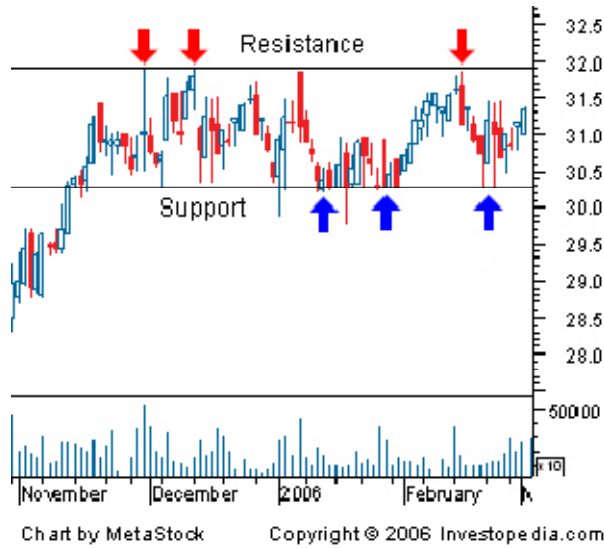
Figure -4 Support and Resistance Level

When the share price reverses the support level and moves downward, it signals the violation of the support level and a bearish market expected. If the share price penetrates the resistance level, it indicates violation of the resistance level and bullish market expectations.

4.3   Gaps

Gaps are formed at that price levels where the security is not bought and sold. These are created in a increasing or decreasing trend. If the prices are rising and the high of previous day is lower than the next day's low, a gap is created. For example, if the high price of firm's share on 16 January is Rs.300 and on 17 January, the low is Rs.325, a gap is formed on the bar chart. This means the share has not bought and sold between price levels Rs.300 and Rs. 325 and signals further rise in price.

Figure-5 Gap

In the same way, in a falling price, a gap is created if the low price on previous day is higher than the high price of next day. For example the low price on Tuesday is Rs. 250 and the high price on Wednesday is Rs. 230, a gap is formed and it means that there was no transaction between the level of Rs. 250 and Rs. 230 and further fall in price is expected.

4.4   Charting Techniques

Chart reading is the simplest tools used by technical analyst. With the help of graphic presentation of scrip price data helps investors to find out the trends easily. Charts never lie but interpretation may be different from one analyst to other. Technical Analysts use following four basic charts:

1. **Line Chart:** To draw line chart closing prices of scrip are taken for a specific time period. A line is drawn by connecting the closing prices over set time period. Line charts do not reflect high, low and opening prices. Reason closing price is often regarded most suitable price in stock data contrast to the high and low for the day.
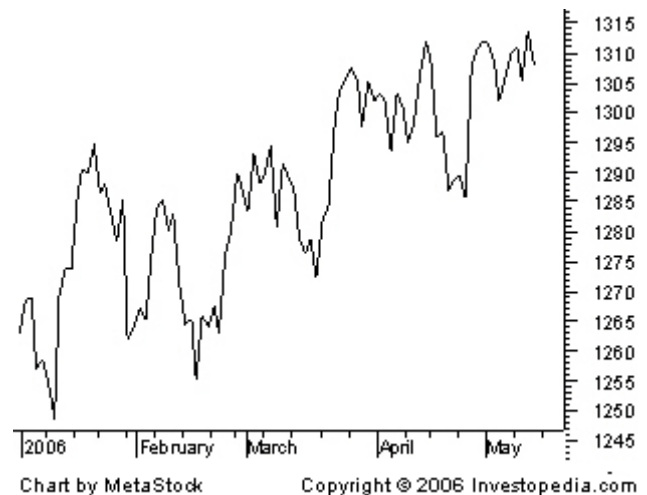
Figure-6 Line Chart

2. **Bar Charts:** Most of the stock market analysts use bar chart as it is simple and easy to understand. To form a bar, two dots are put to reflect the highest and lowest traded price of the day, week or month, then a line is drawn to connect these highest and lowest points. A short horizontal stick is put to mark the closing price.
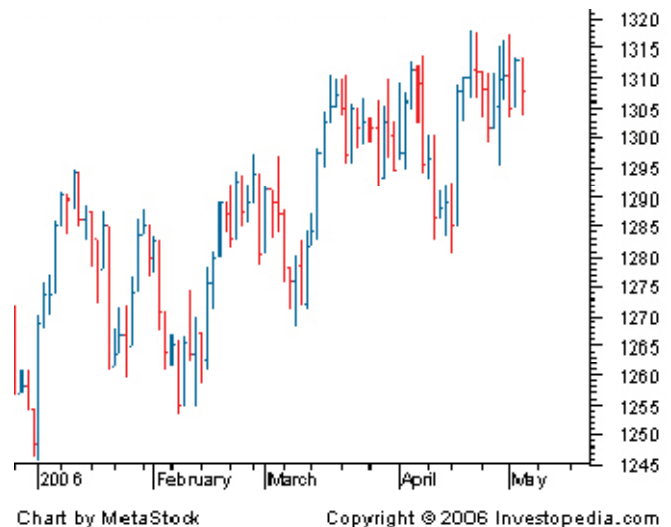
Figure-7 Bar Charts

3. **Candlestick Charts** Candlesticks charts use of colors to explain the happenings of scrip price during the trading period. Different sites use different color standards to construct candle sticks so it is necessary to understand the candlestick color configuration by technical analysts used by a particular site. To create a candle stick chart analysts require data for a scrip's open, high, low and closing prices for a given period. We are considering two colors i.e. back and white. When the candle body is white it

means closing price is higher than opening price and shows a bullish trend. A black body candle indicates the closing price is lower than the opening price and shows a bearish trend.
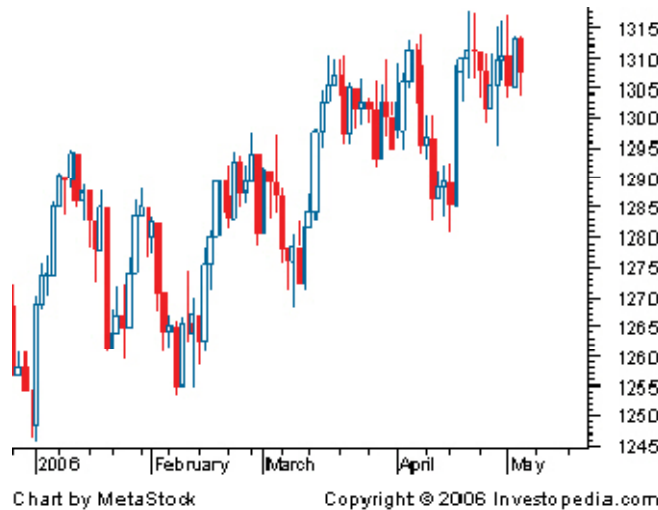
Figure-8 Candlestick Charts

4. Point and Figure Charts The point and figure charts are not commonly used by common investors as it differ in concept and constructions from other charts. This chart reflects price movements and do not consider time scale to form point and figure.
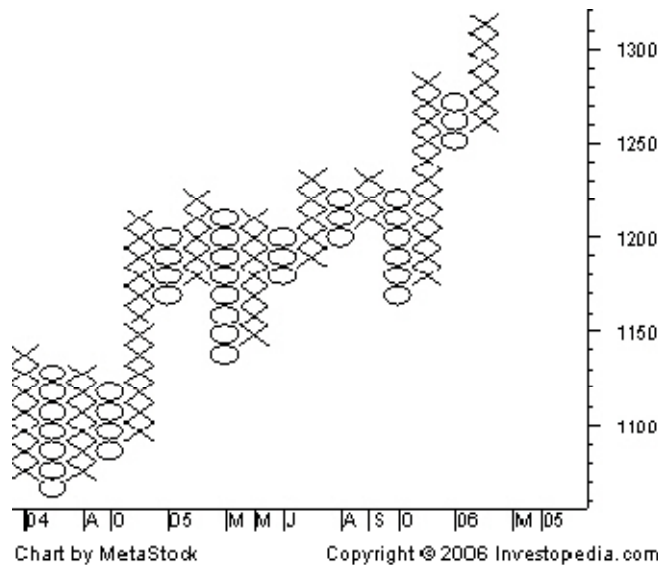
Figure-9 Point and Figure Chart

As price of a scrip rises vertical column of crosses (X) is plotted and it will continue till price rises. When there is fall in the price a circle (O) is plotted in the next column and it will continue till the price will falls. When it start rising a new vertical line of crosses(X) is plotted in the next column and so on. On most PFC charts where the price range is between Rs.20 and Rs.100, a box reflects Rs.1, or 1 point for the stock. According to this technique trend reversal in scrip sets at three points/Rupees or more

4.5   Charts Patterns

Charts divulge definite pattern that are of predictive worth. Technical analysts used chart pattern as add on to other information and as affirmation of signals provided by trend lines. Most commonly used chart patterns are discussed below:

'V' Formation: "In the V formation there is long sharp 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 an inverted 'V', first the rise occurs and then the decline. There can also be extended 'V's. in it, the bottom or top moves more slowly over a broader area."

Tops and Bottoms: "This type of formation is fascinating to watch but what is more important is the middle portion of it. The investor should buy after the upward trend has started and exit before the top is reached. Tops and bottoms are formed at the beginning or the end of the trends. The reversal from the tops and bottoms indicate sell and buy signals".
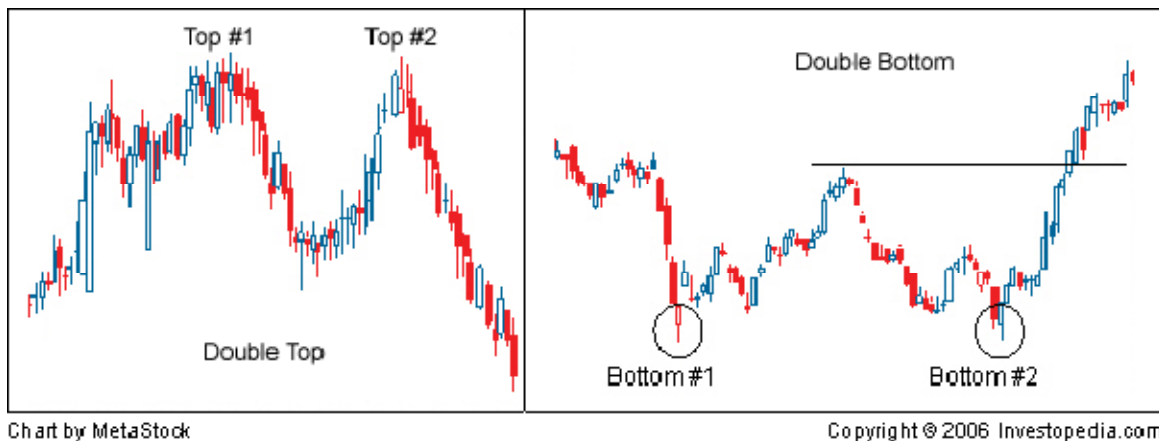

Figure-10 V Formation

Double top and bottom: This formation signals the end of one trend and the beginning of another. The double top is formed when a stock price rises to a certain level, falls rapidly, rises again to the height or more, and turns down. Its pattern resembles the letter 'M'. The double top may indicate the onset of the bear market. The results should be confirmed with share volumes and trends. In a double bottom, the price of the stock falls to a certain level and increases with diminishing activity. Then it falls again to the same or to a lower price and then goes up to a higher level. The double bottom resembles the letter 'W'. Technical analysts view double bottom as a sign of a bull market as shown in the figure 10.

Head and Shoulders: "This pattern is easy to identify and the signal generated by it is considered to be reliable. In the head-and-shoulder pattern, there are three rallies resembling the left shoulder, a head and a right shoulder. A neckline is drawn connecting the lows of the tops. When the stock price cuts the neckline from above, it signals a bear market. The upward movement of the price for some duration creates the left shoulder. At the top of the left shoulder, people who bought during the upward trend begin to sell, resulting in a dip. Near the bottom, there will be reaction and people who bought during

the first upward trend start buying at relatively low prices thus pushing the price upwards. The alternating forces of demand and supply create new ups and lows".

Figure-11 Head and Shoulder and Inverted Head and Shoulder

Inverted Head and Shoulders: "Here, the reverse of the previous pattern holds true. The price of stock falls and rises, which make an inverted right shoulder. As the fall and rise in price continues, the head and left shoulders are created. Connecting the tops of the inverted head and shoulders gives the neckline. When the prices pierce the neckline from below, it indicates the end of a bear market and the beginning of a bull market. These patterns have to be confirmed with the volume and trend of the market."

Rounding Bottom: Rounding bottom formations give a bullish signal and indicate a possible reversal of the downwards trend. They are normally elongated and U-shaped. In order to show the trend reversal:

- The bottom low has to be a new low.

- The low should not be too sharp and take a few weeks to form.

- The decline and the rise should take more or less equal period.

- The break out has to be higher than the beginning of the decline.

- Volumes are high at the beginning of the decline, low at the end of the decline, and increase during the advance.
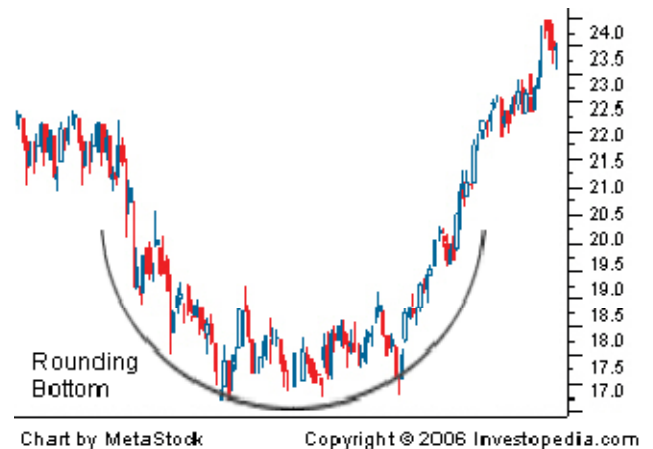

Figure- 12 Round Bottom

Cup and Handle: A cup and handle pattern marks the beginning of a bullish trend. In this pattern, the upward trend pauses for a while and continues after confirmation of the pattern. This price pattern

resembles a cup, and is followed by an upward trend. The downwards or sideways movement of stock price forms a pattern like a handle. When the price movement pierces the resistance lines in the handle, the upwards trend continues. The formation of the cup and handle pattern takes several months or even a year or more.
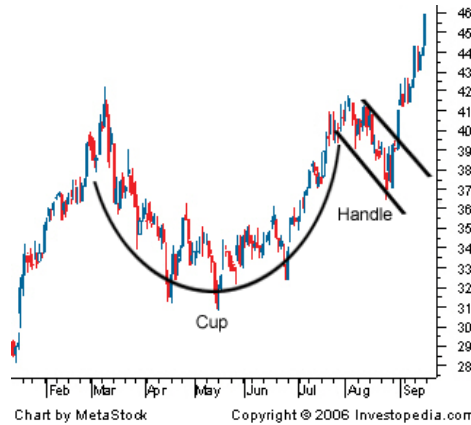

Figure-13 Cup and Handle

Triangles: A triangle formation is easy to recognize and well accepted in technical analysis. Different types of triangle formation are discussed below:

Symmetrical triangle: The symmetrical triangle does not have any bias towards either bull or bear market. It indicates the slowdown or temporary halt in the direction of the original trend. There is always a chance that the original trend will continue after the completion of the triangle.
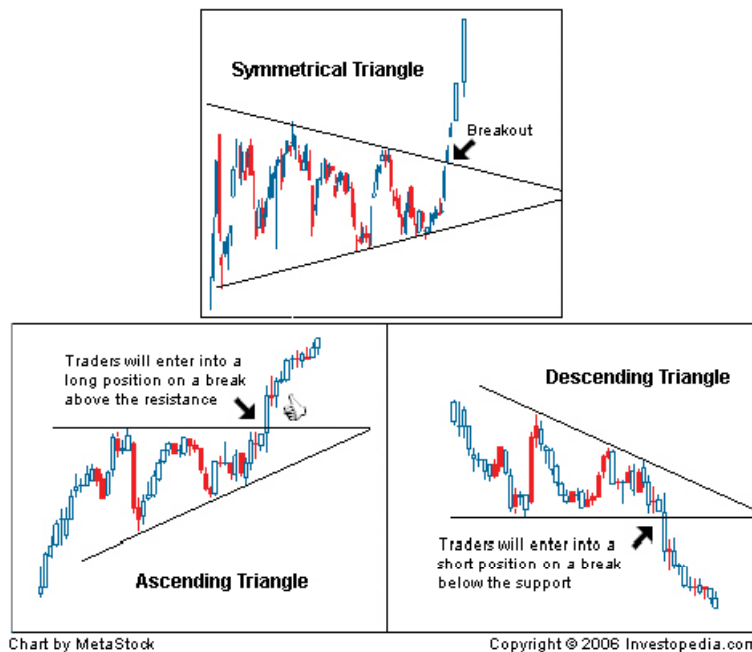

Figure-14 Different Triangle Charts

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 exceeds the supply of it, there is a breakout. The break will be in favour of a bullish trend. This pattern is spotted during an upward move, and the probability of an upward move is high here."

Descending triangle: "Here, the lower tops form the upper trend line, which is a falling one. The lower trend line would be almost horizontal connecting the bottoms. It indicates the support level. The possibility of a downward breakout is high in this pattern. The pattern indicates that the bear operators are more powerful than the bull operators."

Flags: A flag pattern is commonly seen on price charts. These patterns show the market curations of an over-bought or over-sold situation. These patterns form quickly. Each rise and fall may last only three to four days, but if the pattern is wider, it may take three weeks to become complete.
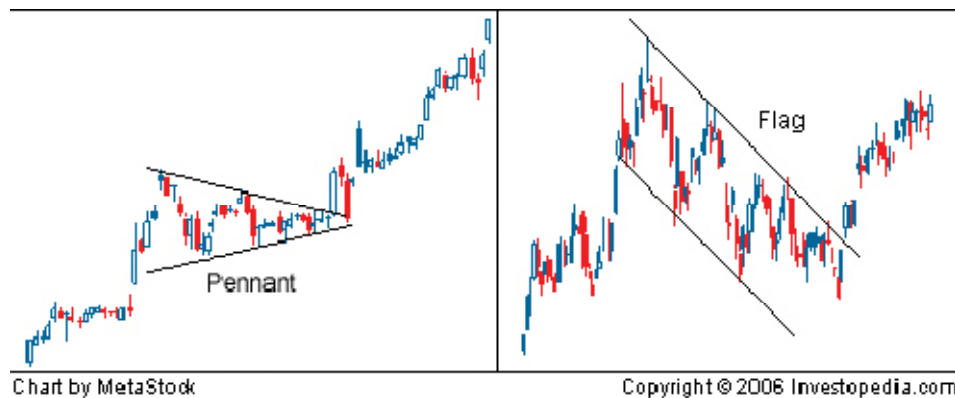

Figure-15 Pennant and Flags

Pennant: The shape of pennant similar to a symmetrical triangle. There can be rising as well as falling pennants. "In a bullish pennant, the lower tops form 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".

4.6   Indicators and Oscillators

A technical indicator is a mathematical calculation based on historic price, volume, or (in the case of futures contracts) open interest information that aims to forecast financial market direction.

An indicator indicates the nature or overall direction of market. A technical indicator is a set of data point obtained by applying mathematical/statistical techniques to the price, volume of a stock or index. Price data consists of opening, high, low or closing price of a security. An indicator may use any of the said price data or use volume of trade in their formulas. **Oscillators** show the market/scrip momentum across a reference point from one extreme to another. The momentum signals overbought and oversold situations of the scrip/market and a probable trend reverse. Daily, weekly, or monthly closing price data of security are used to construct oscillators. Daily price oscillators are helpful for short term buying and selling of securities. To know the trend of the market Investors and traders use the indicators **(**Volume of trade, Breadth of the market, short sales and moving averages**)** and oscillators **(**Moving Average

Convergence and Divergence MACD, Rate of Change ROC, Relative Strength Index RSI, and Stochastic**)**

Technical Indicators:

a) Volume of trade: Trading volume is considered as an outstanding technique of confirming trends. A high up or down in price results in large change in volume. A huge volume with rising price signals a bull market and a huge volume with falling price signals bear market.

b) Breadth of the Market: A cumulative net difference between the number of shares whose price rose /advanced from the previous day and the number of shares whose prices fell/Declined comparing to previous day during the same period is called breadth of the market. To know the future trend the Advance Decline line and market index is plotted on the graph and compared. When the A/D line is sloping down while index line is moving up, bull to bear expected and when A/D line is moving up and the index decline is sloping down bear to bull waiting for.

c) Short Sales: Short interest/short sales refer to a contact to sell scrip that is not owned. The speculators who expect a fall in the price of scrip/market sell now in the hope of buying in future at low price to book profits. The ratio of short sales of a particular selected month and average daily volume of the preceding month is computed. If the ratio is less than 1, signals bear market. Between 1 and 0.5 signals neutral market. Values above 1 signal a bullish market.

d) Moving Average: Moving here refers that the body of the data will be moving ahead by including recent observations and excluding the oldest one. For example a five day moving average, the body of the data moves ahead by including sixth day observation, and leaving the first day's observation, and so on. Moving averages consider closing prices of scrip to study the trend of the market/stock price. The period of the average determines the period of the trend that is being identified. To identify a short term, medium term and long term trend, 10-30 days, 50-125 days and 200 days moving averages are used respectively.

i) Index and Stock Price Moving Averages: The moving average of the individual share/stock and the index are plotted on graph paper for trend comparison. "If the moving average of the stock penetrates the stock market index from above, it is a sell signal. Unfavorable market conditions prevail for the particular stock. If the stock line pushes up through the market average, it is a buy signal."

ii) Comparison of Short term and Long term Moving Averages: If you plot short term and long term moving averages on the graph the intersection of two moving averages give buy or sell signal. "When the share price is falling and short term average intersects the long term moving average from above it is a signal to sell. If the stock price is rising and the short term average intersects the long term average from below it indicates a further rise in price and it gives a buy signal."

e) Exponential Moving Average:

An exponential moving average (EMA) is a weighted moving average. Latest prices data are assigned more weight than older one. The reason behind it latest recent prices data are regarded more significant

than older for accuracy of forecasting trend. A 200 day long term simple average gives equal weight age to price data that are more than six months old. Calculation of the EMA is more complex than calculation of a simple moving average. An EMA calculation first needs an exponent. The calculation of exponent is simple.

Exp = 2/ n+1

Where n= the number of days of the moving average. If it is 10 days, then the exponent is as following

Exp = 2/ 10+1 = 0.1818

If 200-day EMA is calculated then

Exp = 2/ 200+1 = 0.01

The weight given for the shorter period is more than the weight given for the longer period. The weighting declines by half when the moving average period doubles.

EMA = (Current day's close – Previous day EMA) * Exponent + Previous day EMA

A rising exponential moving average indicates rising prices and falling moving average signals decreasing trend in prices.

Oscillators:

a) Moving Average Convergence and Divergence (MACD): The difference between two exponential moving averages is called moving average convergence and divergence. It measures the convergence and divergence between two exponential moving averages of varying periods. Short term and long term exponential moving averages are calculated using the closing prices. The MACD considers the difference between the short term and long term exponential moving averages. Daily or weekly moving averages are also calculated. A 12-day and 26-day exponential moving average and 12-day and 48-day exponential moving averages are common among traders.

The MACD is the short term exponential moving average (SEMA) minus the longer – term exponential moving average (LEMA). If the value of SEMA is more than that of LEMA, the MACD is positive and vice-versa. If both the values are equal, the MACD will be zero. Convergence takes place when moving averages move towards each other. Divergence occurs when the shorter and longer moving averages move away from each other. Usually changes that occur in MACD are due to changes in the short term moving.

MACD Signal Line: The signal line is a trigger line that signals buy or sell strategy. For example signal line of 9-day EMA of MACD line indicates: When the MACD crosses the signal line from below, it is a bullish crossover. When the MACD crosses the signal line from above, it is a bearish crossover.
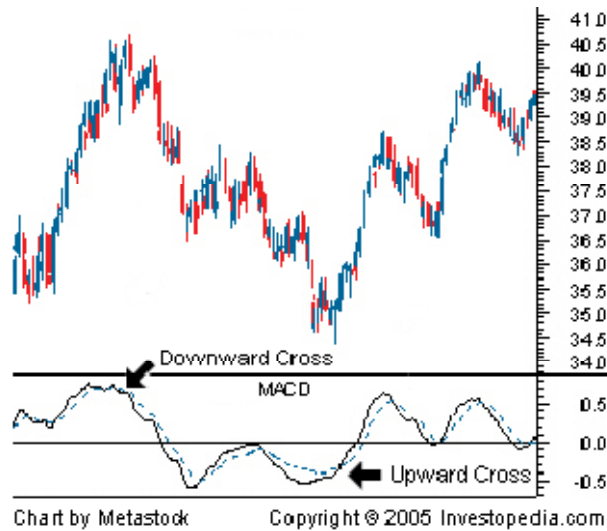
Figure -16 MACD

b) Relative Strength Index (RSI): This oscillator was evolved by Wells Wider and is applied to now the inbuilt technical strength and weakness of a specific share/ market. RSI of a share/market can be computed by following formula:

RSI = 100 – (100/ 1+ Rs.)
Rs. = average profit per day ÷ average loss per day

Depending on the requirement and wish of the analyst RSI can be computed for any number of trading days or the time period of trading implemented in a specific stock exchange. Even it can be constructed for 5,7,9 and 14 days. However longer period RSI reduce possibility of giving the wrong signal. Reactionary or sustained up or down in stock price is predicted by the RSI.

The establish rule of RSI followed by technical analyst is that if the RSI cross 70 it signal of downturn and better to sell the scrip and if RSI falls down below 30, it is time to purchase the scrip.
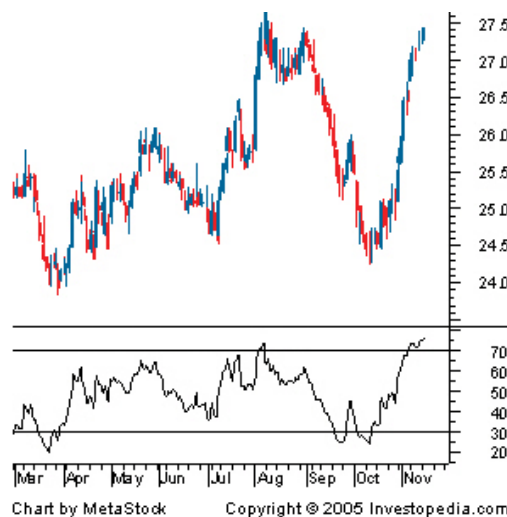

Figure-17 Relative Strength Index

c) Rate of Change – This oscillator measures the rate of change between the current price and the price a number of days in the past or from one period to next period. It is constructed by considering daily closing price for daily ROC and weekly closing price for constructing weekly ROC. Overbought and oversold positions of a security and trend reversal are sensed by ROC. As a general rule if ROC reaches the extreme lower end, it is advisable to buy stock and on the other hand if it touches extreme upper end it is time to sell. Calculation of ROC may be for a short period i.e. 5 days or a longer period 3 months, 6 months or 12 months.

d) Stochastic: It was George C lane that developed the stochastic oscillators in the late 1950s. Stochastic oscillator is a momentum indicator shows the location of the closing price relative to the high-low range in a predefined period. Usually, when the stock price increases, the closing prices tend to be near the high price of the day. When prices fall, the closing prices tend to be near the low price of the day. Lane developed this stochastic indicator on the basis of his observations. The stochastic indicator has two lines - % K and % D. The % K line is faster than the %D line. The % D line lags behind % K line. The values of the % K and % D line lie between zero and 100. Thus, the lines oscillate between 0 and 100.

To calculate this stochastic indicator, typically five days, weeks, or months are used. Yet, stock traders use different periods to suit their method of trading. The formula used for the construction of the %K line is

$\%K = 100 \{(C - L_5) / (H_5 - L_5)\}$

Where

C = Latest closing price

L_5 = Lowest price touched by the scrip during the last five days

H_5 = Highest price touched by the scrip during the last five days

Given below is the formula for the calculation of %D line

$\%D = 100 * (H_3/L_3)$

Where

H_3 = Three day sum of $(C - L_5)$

L_3 = Three day sum of $(H_5 - L_5)$

In the stochastic oscillator, the overbought region is above the 70 mark and the oversold region is below the 30 mark. It is observed the stochastic generates best buy signal below the 15 mar and the best sell signal above the 85 mark. %D line is taken to identify the overbought and oversold zone. Presence of %K line in the overbought and oversold region gives early indication of the possibility of the % D line following it. When %D line is in the overbought zone and the %K line intersects it from above, it

generates a sell signal. In the oversold region if the % line moves above the %D line, it gives a buy signal.

4.7   Evaluation of Technical Analysis

Among different approaches of security analysis Technical analysis approach is considered extremely controversial. It has its avid supporter's as well stern opponent. Supporters of technical analysis argue their position in the following manner

1. Due to crowd psychology effect, trends continue for considerable time period. Tools and techniques of technical analysis lend a hand to recognize these trends early helps in investment decision making.

2. Shifts in demand and supply are gradual rather than instantaneous. Technical analysis approach helps in identifying shifts in market forces i.e. demand and supply early and provide indication to future price movements.

3. Basic qualitative and quantitative information of a company is absorbed and digested by market over a period of time. This is why, the trends continue in more or less in the same direction till the information is fully incorporated in the stock price.

4. Charts provide a picture of what has happened in the past and hence give a sense of volatility that can be expected from the stock.

   The critics of technical analysis consider technical analysis is a futile exercise on the basis of following arguments:

1. "Most technical analysts are not able to offer convincing explanations for the tools employed by them.

2. Empirical evidence in support of the random walk hypothesis cast its shadow over the usefulness of technical analysis.

3. By the time an uptrend or downtrend may have been signaled by technical analysis, it may already have taken place.

4. Ultimately, technical analysis must be a self defeating proposition. As more and more people employ it, the value of such analysis tends to decline.

5. The numerous claims that have been made for different chart patterns are simply untested assertions.

6. There is a great deal of ambiguity in the identification of configurations as well as trend lines and channels on the charts. The same can be interpreted differently. As an example, here is an extract from a commentary of a technical analyst:

Despite these limitations, technical analysis is very popular. It is only in the rational, efficient and well ordered market where technical analysis has no use. But given the imperfections, inefficiencies and

irrationalities that characterize real markets, technical analysis can be helpful. Hence, it can be concluded that technical analysis may be used, albeit to a limited extent, in conjunction with fundamental analysis to guide investment decision-making, as it is supplementary to fundamental analysis rather than substitute for it."

Source:https://www.wisdomjobs.com/e-university/security-analysis-and-investment-management-tutorial-356/evaluation-of-technical-analysis-11452.html

Difference between Fundamental and technical analysis

1. Fundamental analysis is done by an investor for long term investment in securities of companies and follow conservative. Whereas technical analysis is done generally by short term investor/speculator to book profit through short term buying and selling securities and follow aggressive approach.
2. Buy and hold securities at least for one year policy is adopted by fundamental analyst as he does not expect any major boost in the value of his investments in short period i.e. less than a year. Technical analyst believes in making quick money by short term buying and selling of securities on account of change in prices
3. Fundamental analyst by investing in equity shares maximize his income through current yield/dividend and long term capital gains by way of capital appreciation. Whereas for technical analyst no distinction between current income and capital gains. He believes in in short-term profits through buying and selling securities.
4. Forecasting of stock prices is based on economy industry and company statistic in case of fundamental analysis. The decision variables to value the stock are risk and return associated with it. Whereas, pattern of demand and supply of stock forms the basis to forecast security price in case of technical analysis
5. Fundamental analyst uses tools of financial analysis and statistical forecasting techniques to find the intrinsic value of scrip. Technical analyst mainly uses charting techniques, indicators and oscillators etc. to know and predict the trends of security price.

4.8   Efficient Market Hypothesis/Random Walk Theory

Market efficiency is the accuracy and speed with which the market translates the expectation into prices. Once the information is available in the public domain the market will react to it. Expectations of returns also have an impact on the psychology of other investors. The efficient market hypothesis negates the technical analysis that security prices follow a certain trend/pattern. It states that share price fluctuations are random and do not follow any regular pattern. French Mathematicians Louis Bachelier revealed in his article in 1900 that security price fluctuations were random. His findings were further supported by British Statistician Maurice Kendall that stock price series is a wandering one. Each change in the price of security is independent of the previous one. Further in 1970 American economist Eugene Fan stated that efficient markets fully reflect the available information.

Efficient Market Assumptions

    i.   The basic assumption of efficient market hypothesis is that all pertinent information is accommodated in the stock price.

   ii.   A security is never overpriced or underpriced It is always priced fairly.

  iii.   Investors can never time and again beat the market by using investment strategies.

  iv.   There are no taxes transaction charges and no restrictions on investments.

   v.   Investors are rational and risk averse, expecting high return and low risk.

  vi.   In efficient market investors earn normal returns for their level of risk.

Fama suggested that efficient market hypothesis can be divided into three categories weak form, semi strong form, and the strong form.

Weak Form : The weak form of the efficient markets hypothesis holds that the current price of security fully reflects all historical information, thus, past data cannot be used to predict future prices. This form holds that any attempt to predict prices based on past information is futile as future price changes are independent of past price changes. Weak form of market efficiency is opposite to technical analysis which states that price move in predictable manner and historical price movements can help to forecast future price trends. Empirical evidence has shown that security prices adjust to information and prices move in independent manner. Both weak form of market efficiency and random walk theory states that analyzing the past information does not improve the forecasting ability of security prices.

Semi-Strong Form: The semi-strong-form of market efficiency hypothesis asserts that market absorbs quickly and efficiently all those publicly information, as well as the information regarding historical prices. As prices adjust to the information quickly and accurately, abnormal profits cannot be earned on a consistent basis. The empirical evidence support the convention that the public reacts quickly to the new information correctly, but there has been evidence that market does not always digest the new information correctly The inefficiency in the market mechanism absorbing the data is found to be corrected over a period of time, as the investors take time to analyze and conclude the effect of any public information. However, the semi strong form of EMH not empirically well supported but in many foreign markets the semi-strong form is found to be applicable and markets absorbs all published information due to means of modern information and communication technology.

Strong Form: The strong form of market efficiency hypothesis states that the current prices of securities fully reflect all available information both public and private. If this holds true , that price reflect the information that is available to the select groups like the management, financiers, stock exchanges official etc. Thus according to this form no information that is available be it public or inside can be used consistently to earn abnormal returns. This means that security analysts and portfolio managers who have access to more information than ordinary investors, are not able to use it to earn more profits The empirical research have found evidence that is inconsistent with the strong form of the EMH.

4.9   Market Inefficiencies/Anomalies

Many researches in the past have proved the presence of market inefficiency. Parallel several studies contradict the concept of market inefficiency. These are outlined in the following paragraphs:

i) Overreactions of the market: Recent researches have proved market overreacts to corporate news. For example news of reduction in a company's profits resulting decline in share price is market overreaction. After this initial decline stock will take several weeks to reach the normal level. During this period investors buy the stock when it was low priced and sells it once the normal level reached and earns an abnormal return which goes against the efficient market hypothesis.

ii) Reversal to Mean Return: Several studies have proved that stock returns have tendency to return to their average level. That means stocks that currently yield low return tend to high return in future and vice-versa. This leave rooms to predict the future price which is against the EMH.

iii) Delayed Absorption of New Information

iv) Low Price/Earning Effect: Many studies found that stock with low price earnings ratio yield high return than stock with higher P/Es. It is known as PE effect. If historical information of P/E ratios can help investor to obtain superior stock return, it questions the validity of semi-strong form of market hypothesis.

v) Small Firm Effect: The theory of small firm effect maintains that investing in small firms with low capitalization provide superior return.

Self Assessment Questions

1. How do moving averages help to evolve buy and sell strategy?
2. How do RSI and ROC indicate the momentum of price change?
3. Explain the different types of oscillators.
4. What is Dow theory and how is it used to determine the direction of the stock market?
5. How does technical analysis differ from fundamental analysis?
6. Do stock prices have a support level and resistance level? If so, explain.
7. 'The nature of triangles gives different indications' Comment.
8. How does Efficient Market Hypothesis is different from technical analysis?

Suggested Book Readings:

1. Security Analysis and Portfolio Management:- By Punithavathy Pandian. Vikas Publishing House PVT. LTD.
2. Security Analysis and Portfolio Management:- By S Sasidharan and Alex K Mathews. Tata McGraw Hill Education Private Limited.
3. Security Analysis and Portfolio Management:- By S Kelvin. PHI Learning Private Limited.
4. Security Analysis and Portfolio Management:- By Donald E Fisher, Ronlad J Jordon and A K Pradhan. Pearson IN.