



IS INSTITUTE OF TECHNOLOGY

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Master of Business Administration



SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT Semester: III Subject code: 22MBAFM304

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Course Content

Module-1

Introduction to Investment: Investment Avenues, Attributes, Investor V/s speculator, Features of a good Investment, Investment Process.

Financial Instruments: Money Market Instruments, Capital Market Instruments, Derivatives. Securities Market: Trading & Settlement Procedure, Stock Market Indicators- Indices of Indian Stock Exchanges (only Theory).

Module-2

Return and Risk Concepts: Concept of Risk, Causes of Risk, Types of Risk- Systematic risk- Market Price Risk, Interest Rate Risk, Purchasing Power Risk, Unsystematic Risk- Business risk, Financial Risk, Insolvency Risk, Risk-Return Relationship, Concept of diversifiable risk and non- diversifiable risk. Calculation of Return and Risk of Individual Security & Portfolio (Theory & Problems).

Module-3

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Module-4

Fundamental & Technical Analysis: Macro-Economic and Industry Analysis: Fundamental analysis-EIC Frame Work, Economy Analysis, Industry Analysis, Company Analysis- Financial Statement Analysis. Market Efficiency: Efficient Market Hypothesis, Forms of Market Efficiency, Empirical test for different forms of market efficiency. Technical Analysis – Concept, Theories- Dow Theory, Eliot Wave theory. Charts-Types, Trends and Trend Reversal Patterns. Mathematical Indicators –Moving Average Con vergence-Divergence, Relative Strength Index (Theory only).

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Modern Portfolio Theory: Markowitz Model- Diversification, Portfolio Return, Portfolio Risk, Efficient Frontier. Sharpe's Single Index Model, Capital Asset Pricing Model: Assumptions, CAPM Equation, Capital Market Line, Security Market Line, CML V/s SML. Sharpe's Optimum Portfolio Construction. (Theory & Problems).

Module-6

Portfolio Management Strategies and Performance Evaluation: Portfolio Management Strategies: Active and Passive Portfolio Management strategy. Portfolio Revision: Portfolio Revision Strategies – Objectives, Performance plans. Mutual Funds: Concept of Mutual Funds, Participants in Mutual Funds, Advantages of Investment in Mutual Fund, Measure of Mutual Fund Performance. Portfolio performance Evaluation: Measures of portfolio performance (Theory & Problems).

Dr. Deepak Kumar D, Assoc. Professor, Mr. Chandan L, Asst. Professor, Mr. Harsha R Assistant Professor RNSIT

(9 Hours)

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(6 Hours)

(8 Hours)

MODULE 1: Investment

Introduction to Investment: Investment Avenues, Attributes, Investor V/s speculator, Features of a good Investment, Investment Process.

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INVESTMENT

- ✤ Investment is the employment of funds on assets to earn income or capital appreciation.
- ✤ The individual who invests is known as the investor.
- In economic terms, investment is defined as the net addition made to the capital stock of the country.
- In financial terms, investment is defined as allocating money to assets to gain profit over a period of time.
- Investments in economic and financial terms are inter-related where an individual's savings flow into the capital market as a financial investment, which is further used as an economic investment.

OBJECTIVES OF INVESTMENT

The main investment objectives are increasing the rate of return and reducing the risk. Other objectives like safety, liquidity, and hedge against inflation can be considered as subsidiary objectives.

• *Return* – investors always expect a good rate of return from their investments. The rate of return could be defined as the total income the investor receives during the holding period stated as a percentage of purchasing price at the beginning of the holding period.

 $return = end \ period \ value - beginning \ period \ value + dividend \ imes 100$

Beginning period value

The rate of return is stated semiannual or annual to help compare among the different investment alternatives. If it is a stock, the investor gets the dividend as well as the capital appreciation as returns.

- *Risk* The risk of holding securities is related to the probability of actual return becoming less than the expected returns. The word risk is synonymous with the phase variability of the return. Investments' risk is just as important as measuring its expected rate of return because minimizing risk and maximizing the rate of return are the interrelated objectives in investment management. Every investor likes to reduce the risk of his investment by proper combination of different securities.
- *Liquidity* marketability of the investment provides liquidity to the investment. The liquidity depends upon the marketing and trading facility. If a portion of the investment could be converted into cash without much loss of time, it would help the investors meet the emergencies. Stocks are liquid only if they command a good market by providing adequate return through dividends and capital appreciation.
- *Hedge against inflation* since there is inflation in almost all the economy, the rate of return should ensure a cover against inflation. The return rate should be higher than the rate of inflation; otherwise, the investors will have a loss in real terms. Growth stocks would appreciate their values over time and protect against inflation. The return thus earned should assure the safety of the principal amount, regular flow of income, and be a hedge against inflation.
- *Safety* The selected investment avenue should be under the legal and regulatory framework. If it is not under the legal framework, it is difficult to represent the grievances, if any. Approval of the law itself adds a favor of safety. Ex: Bank deposits, LIC

SPECULATION

Speculation means taking business risks with the anticipation of acquiring short-term gain. It also involves the practice of buying and selling activities to profit from the price fluctuations. An individual who undertakes the activity of speculation is known as a speculator.

Factors	Investor	Speculator			
Time horizon	Plans for a longer time horizon. Holding period varies from one year to few years.	Plans for a 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 the company regularly.	Considers inside information, hearsays and market behaviour.			
Funds	Uses his own funds and avoids borrowed funds.	Uses borrowed funds to supplement his personal resources.			

DIFFERENCE BETWEEN INVESTOR AND SPECULATOR

GAMBLING

Gambling is usually a very short-term investment in a game of chance. The role of dice or the turn of a card determines the results. People gamble as a way to entertain themselves, earning incomes would be the secondary factor. Gambling enjoys artificial risks whereas commercial risks present in the investment activity

Difference between gambling and investment

Gambling	Investment	
It is a short-time investment in a game of chance.	It is the long-term employment of funds on assets.	
Gambling is a way of entertainment and earning is	Present consumption is foregone for future return.	
a secondary factor.	Commercial risks are present in investment activity.	
The risk in gambling is different from investment. It's an artificial risk in gambling.	There is an analysis of risk and return and positive returns are expected by the investors.	
There is no risk and return trade-off in gambling and negative outcomes are expected.	1 2	

FEATURES OF A GOOD INVESTMENT

• Objective fulfillment

An investment should fulfill the objective of the savers. Every individual has a definite objective in investing. When the investment objective is contrasted with the uncertainty involved with investments, the fulfillment of the objectives through the chosen investment avenue could become complex.

• Safety

The first and foremost concern of any ordinary investor is that his investment should be safe. That is he should get back the principal at the end of the maturity period of the investment. There is no absolute safety in any investment, except probably with investment in government securities or such instruments where the repayment of interest and principal is guaranteed by the government.

• Return

The return from any investment is expectedly consistent with the extent of risk assumed by the investor. Risk and return go together. Higher the risk, the higher the chances of getting a higher return. An investment in a low-risk - high safety investment such as investment in government securities will get the investor only low returns.

• Liquidity

Given a choice, investors would prefer a liquid investment over a higher return investment. Because the investment climate and market conditions may change or investor may be confronted by an urgent unforeseen commitment for which he might need funds, and if he can dispose of his investment without suffering unduly in terms of loss of returns, he would prefer the liquid investment.

• Hedge against inflation

The purchasing power of money deteriorates heavily in a country that is not efficient or not well endowed, in relation to another country. Investors, who save for the long term, look for a hedge against inflation so that their investments are not unduly eroded; rather they look for a capital gain that neutralizes the erosion in purchasing power and still gives a return.

• Concealability

If not from the taxman, investors would like to keep their investments rather confidential from their kith and kin so that the investments made for their old age/ uncertain future do not become a hunting ground for their own lives. Safeguarding financial instruments representing the

investments may be easier than investment made in real estate. Moreover, the real estate may be prone to encroachment and other such hazards.

• Tax shield

Investment decisions are highly influenced by the tax system in the country. Investors look for front-end tax incentives while making an investment and also rear-end tax reliefs while earning the benefit of their investments. As against tax incentives and reliefs, if investors were to pay taxes on the income earned from investments, they look for higher returns in such investments so that their after-tax income is comparable to the pre-tax equivalent level with some other income which is free of tax, but is riskier.

ECONOMIC Vs FINANCIAL INVESTMENT

Financial Investment

A financial investment allocates resources into a financial asset, such as a bank account, stocks, mutual funds, foreign currency, and derivatives. Financial investments are purchases of financial claims. This type of investment may or may not yield a return. However, businesses gain from placing money into financial investments because many safe assets, such as an interest-bearing savings account, may yield enough of a return to protect it from inflation. Essentially, some financial investments offer protection against rising prices.

Economic Investment

An economic investment puts resources in something that may yield benefits over its initial cost. Though these resources still include money, investments can also be made in time, assistance, and mentoring. Likewise, assets are not limited to financial instruments. An economic investment may include buying or upgrading machinery and equipment or adding to a labor force.

Measuring the return of economic investment is not as straightforward as a financial investment. While a financial investment provides concrete data regarding the asset's past performance and its day-to-day growth or decline, assessing economic investments is not as direct because the return of economic investment is not always apparent.

INVESTMENT PROCESS



1. Investment policy: The government or investor before proceeding into investment formulates the policy for the systematic proceeding. The essential ingredients are:

Investible funds: It is the core of investment policy. The fund may be generated through savings or borrowings. If the funds are borrowed the investor has to be extra careful in the selection of alternatives. The return should be higher than the interest rate.

Objectives: the objectives are framed on the premises of the required rate of return, need for regularity of income, risk perception, and need for liquidity. The risk taker's objective is to earn a high rate of return or vice versa

Knowledge: Knowledge about the investment alternatives and markets plays an important role. The risk and the return associated with each alternative differ from each other.

Ex: investment in equity yields a high return but has more risk than fixed-income securities.

The investor should be aware of the stock market and the functions of brokers. The knowledge about the stock exchanges enables the trade of the stock intelligently.

2. Security analysis: After formulating the policy the securities to be bought have to be scrutinized through the market, industry, company analysis.

Market analysis: the stock market mirrors the general economic condition. The growth in the GDP is reflected in the stock prices. The stock prices may be fluctuating in the short run but in the long run, they may move in trends i.e. either upwards or downwards. The investor can fix his entry and exit points through technical points

Industry analysis: the industries that contribute to the economy vary in their growth rates and their overall contribution to the economy. Some industries grow faster than the GDP and are expected to grow. The economic significance and the growth potential of the industry have to be analyzed. *Company analysis:* the company earnings, profitability, operating efficiency, capital structure, and management have to be screened. These factors have a direct bearing on the stock prices and returns.

3. Valuation

The valuation helps the investor to determine the return and risk expected from an investment.

The *intrinsic value* of the share is measured through the book value of the share and the priceearnings ratio. The real worth of the share is compared with the market price and then the investment decisions are made.

Future value: Future value of the securities could be estimated by using a simple statistical technique like trend analysis. The analysis of the historical behavior of the price enables the investor to predict the future value.

4. Construction of portfolio

A portfolio is a combination of securities. The portfolio is constructed in such a manner to meet the investor's goals and objectives. The investor tries to attain maximum return with minimum risk. Toward this end, he diversifies his portfolio and allocates funds among the securities.

Diversification: the main objective of diversification is the reduction of risk in the loss of capital and income. It can be

<u>Debt</u> equity diversification: debt instruments provide assured return with limited capital appreciation. Common stock provides income and capital gain but with a high degree of risk. Both debt and equity are combined to complement each other.

<u>Industry diversification</u>: Industries' growth and their reaction to the government policies differ from each other.

 \underline{Ex} : banking industry shares provide regular income with less capital appreciation. The IT stock yields high returns and capital appreciation but their growth rate after 2002 is unpredictable. Thus, industry diversification is needed and it reduces the risk.

<u>Company diversification</u>: securities from different companies are purchased to reduce the risk. Technical analyst suggests buying based on the price movement. Fundamental analysts suggest the selection of financially sound and investor-friendly companies

Selection: Based on the diversification level, industry, and company analyses the securities have to be purchased. Funds are allocated for selected securities.

5. Evaluation:

The efficient management of the portfolio calls for evaluation. This process consists of

Appraisal: The return and the risk performance of the security vary from time to time. The variability in the returns is compared and measured. The developments in the economy, industry, and relevant companies have to be appraised. The appraisal warns of the loss and steps that can be taken to avoid such losses.

Revision: Revision depends on the results of the appraisal. The low-yielding securities with high risk are replaced with high-yielding securities with the low-risk factor. To keep the return at a particular level necessitates the investor to revise the components of the portfolio periodically.

INVESTMENT ALTERNATIVES.

1 CORPORATE SECURITIES

EQUITY SHARES

Equity shares are commonly referred to as common stock or ordinary shares. Even though the words shares and stocks are interchangeably used, there is a difference between them. The share capital of a company is divided into a number of small units of equal value called shares.

Equity share have the following rights according to section 85(2) of the companies Act 2013

- 1. Right to vote at the general body meeting of the company.
- 2. Right to control the management of the company.
- 3. Right to share in the profits in the form of dividends and bonus share.
- 4. Right to claim on the residual after repayment of all the claims in the case of winding up of the company.
- 5. Right to pre-emption in the matter of issue of new capital.

SWEAT EQUITY

Sweat equity is a new equity instrument introduced in the companies (amendment) ordinance, 1988. Newly inserted section 79A of Companies Act, 1956 allows the issue of sweat equity. However, it should be issued out of a class of equity shares already issued by the company.

It cannot form a new class of equity shares. Section 79A (2) explains that all limitations, restrictions, and provisions applicable to equity shares are applicable to sweat equity. Thus, sweat equity forms a part of equity share capital.

The definition of sweat equity has two different dimensions

- 1. Shares are issued at a discount to employees and directors.
- Shares issued for consideration other than cash for providing know-how or making available rights like intellectual property rights or value additions, by whatever name called.

NON-VOTING SHARES

Non-voting shares carry no voting right, they carry additional dividends instead of the voting rights even though the idea was widely discussed in 1987, and it was only in the year 1994 that the finance minister announced certain board guidelines for the issue of non-voting shares. They have the right to participate in the bonus issue. The non-voting shares also can be listed and traded in the stock exchanges. If non-voting shares were not paid a dividend for 2 years, the shares would automatically get the non-voting rights. The company can issue this to a max of 25% of voting stock. The dividend on non-voting shares would have to be 20% higher than the dividend

on voting shares. All rights and bonus shares for the non-voting shares have to be received in the form of non-voting shares only.

RIGHT SHARES

Shares offered to the existing shareholders at a preferential price by the company are called the right shares. They are offered to the shareholders as a matter of legal right. If a public, company wants to increase its

capital by way of issuing shares after 2 years from its formation date. The right shares may be partly paid. A minimum subscription limit is prescribed for the right issues. In the event of the company failing to receive a 90% subscription, the company shall have to return the entire money received. At present, SEBI has removed this limit. Right issues are regulated under the provisions of the company's act.

BONUS SHARES

Bonus shares are the distribution of shares in addition to the cash dividends to the existing shareholders. Bonus shares are issued to the existing shareholders without any payment of cash. Bonus share aims to capitalize the free reserves. The bonus issue is made out of the free reserves

built out of genuine profit or share premium collected in cash only. The bonus issue could be made only when all the partly paid shares if any, existing are made fully paid up.

They take it as an indication of higher future profits. Bonus shares are declared by the directors only when they expect a rise in the profitability of the concern. The issue of bonus shares enables the shareholders to sell the shares and get capital gains while retaining their original shares.

PREFERENCE SHARES

Some of its features resemble the bond and others equity shares. Like the bonds, their claims on the company's income are limited and receive the fixed dividend. The dividend received by the preferred stock is treated on par with the dividend received from the equity share for tax purposes. These shareholders do not enjoy any of the voting powers except when any resolution affects their rights.

Cumulative preference shares

Here, the cumulative total of all unpaid preferred dividends must be paid before dividends are paid on the common equity. The unpaid dividends are known as arrears. Generally, three years of arrears accrue and the cumulative feature ceases after three years. But the dividends in arrears continue if there is no such provision in the articles of association.

Non-cumulative shares

As the name suggests, the dividend does not accumulate if there is no profit in the company in a particular year, the company does not pay it. In the wind up of a company, if the preference and equity shares are fully paid, they have no further rights to have claims in the surplus. If there is a provision in the articles of association for such claims, then they have the right to claim.

Convertible preference shares

The convertibility feature makes the preference shares more attractive investment security. The conversion feature is almost identical to that of the bonds. These preference shares are convertible as equity shares at the end of the specified period and are quasi-equity shares.

Redeemable preference shares

If there is a provision in the Article of association, redeemable preference shares can be issued. But the redemption of the shares can be done only when

- a) The partly paid-up shares are made fully paid up.
- b) The fund for redemption is created from the profits, which would otherwise be available for distribution of dividends or out of the proceeds of a fresh issue of shares for the purpose.

- c) If any premium has to be paid on redemption, it should be paid out of the profits or out of the company's share premium account.
- d) When redemption is made out of profits, a sum equal to the nominal value of the redeemed shares should be transferred to the capital redemption reserve account.

Irredeemable preference shares

This type of share is not redeemable except on occasions like winding up the business. In India, this type of share was permitted till 15th June 1988. The introduction of section 80A in the Companies Act 1956 put an end to it.

Cumulative convertible preference share

This CCPS was introduced by the government in 1984. This preference share gives a regular return of 10% during the gestation period from three years to five years and then converted into equity as per the agreement.

DEBENTURE

According to the Company's act 1956 "Debenture includes Debenture stock, bonds and any other securities of the company, whether constituting a charge on the assets of the company or not". Debentures are generally issued by the private sector. Companies have a long-term promissory note for raising loan capital. Public sector companies and financial institutes issue bonds.

The characteristic feature of debenture

- 1. **Form** It is given in the form of a certificate of indebtedness by the company specifying the date of redemption and interest rate.
- 2. **Interest** the rate of interest is fixed at the time of issue itself which is known as contractual or coupon rate of interest. Interest is paid as a percentage of the par value of the debenture and may be paid annually, semi-annually, or quarterly. The company has the legal binding to pay the interest rate.
- 3. **Redemption** as stated earlier, the redemption date would be specified in the issue itself. The maturity period may range from 5 years to 10 years in India. They may be redeemed in installments. Redemption is done through the creation of a sinking fund by the company. Buy-back provisions help the company to redeem the debentures at a special price before the maturity date. Usually, the special price is higher than the par value of the debenture.

4. **Indenture** is a trust deed between the company issuing debenture and the debenture trustee who represents the debenture holders. The trustee takes the responsibility of protecting the interest of the debenture holders and ensures that the company fulfills the contractual obligations. Financial institutes, banks, insurance companies are firm attorneys who act as trustees to the investors.

Types of debenture

Debentures are classified based on security and convertibility.

1. Secured or unsecured

It is secured by a company's specific asset. In case of default, the trustee can take hold of the asset on behalf of the debenture holders.

2. Fully convertible debenture

This type of debenture is converted into equity shares of the company on the expiry of a specific period according to the guidelines issued by the SEBI.

3. Partly convertible debenture

This debenture consists of two parts namely convertible and non-convertible. The convertible portion can be converted into shares after a specific period. Ex: Proctor and Gamble had issued PCD of Rs. 200 each to its existing shareholders. The investor can get a share for Rs. 65 with the face value of Rs.10 after 18 months from the allotment.

4. Non-convertible debenture

Holders cannot convert the debentures into equity shares and are redeemed at the expiry of the specific period.

BONDS

Bonds represent long-term debt instruments. The issuer of the bond promises to pay a stipulated stream of cash flow. A bond is a debt security issued by the government, quasi-government, public sector enterprises, and financial institutions.

Various features of a bond are:

- > The interest rate is generally fixed
- ➢ It is traded in the securities market
- > At the time of issue of bonds, the maturity date is specified

Some of the types of bonds that a company can issue are:

Secured bonds and unsecured bonds

The secure bond is secured by the assets of the issuer. If it is not secured it is called an unsecured bond, but it should be issued by one who has the highest credit rating.

Perpetual bonds and redeemable bonds

Bonds that do not mature or never mature are called perpetual bonds. The interest rate alone would be paid.

Fixed interest rate bonds and floating interest rate bonds

In the fixed interest rate bonds, the interest rate is fixed at the time of issue. Whereas in the floating rate bonds, the interest change according to the benchmark rate.

Zero-coupon bonds

These bonds sell at a discount and the face value is repaid at maturity. For example, a zero-coupon bond that matures in 15 years with the face of Rs. 40000 would be sold at Rs.6500 to give a return of 12% per annum.

Deep discount bonds

A bond that sells at a significant discount from par value. A bond that is selling at a discount from par value and has a coupon rate significantly less than the prevailing rates of fixed-income securities with a similar risk profile. These low-coupon bonds are typically long-term and issued with call provisions. Investors are attracted to these discounted bonds because of their high return or minimal chance of being called before maturity.

Capital indexed bonds

The principal amount of the bond is adjusted for inflation every year. The befit of the bond is that it gives the investor an increase in return by taking inflation into account. The investor enjoys the benefit of a return on his principal, which is equal to the average inflation between issue (purchase) and maturity period of the instrument.

2 MONEY MARKET INSTRUMENTS

Debt instruments that have a maturity of less than 1 year at the time of issue are called Money market instruments. It refers to a mechanism whereby on the one hand borrowers manage to obtain short-term loanable funds and on the other, lenders succeed in getting creditworthy borrowers for their money.

Types of money market

- The unorganized market
- The organized market

Unorganized sector

- Unregulated non-banking financial intermediaries: Finance companies, chit funds.
- Indigenous bankers
- Moneylenders

Organized sector

It comprises the reserve bank of India, commercial banks, foreign banks, cooperative banks, finance corporations, mutual funds, and the finance house of India limited (DFHI)

The important money market instruments are;

i. Call Money Market

The call money market is an integral part of the Indian Money Market, where the day-to-day surplus funds (mostly of banks) are traded. The loans are of short-term duration varying from 1 to 14 days. The money that is lent for one day in this market is known as "*Call Money*", and if it exceeds one day (but less than 15 days) it is referred to as "*Notice Money*".

ii. Certificate of Deposit

CDs are negotiable money market instruments and are issued in dematerialized form or a promissory note, for funds deposited at a bank or other eligible financial institution for a specified period. They are like bank term deposits accounts. Unlike traditional time deposits, these are freely negotiable instruments and are often referred to as Negotiable Certificate of Deposits.

iii. Commercial Paper

Commercial Paper (CP) is an unsecured money market instrument issued in the form of a promissory note. Only highly rated corporate borrowers, primary dealers (PDs), an all-India financial institution (FIs) can issue CP.

- Denomination: min. of 5 lakhs and multiple thereof.
- Maturity: min. of 7 days and a maximum of up to one year from the date of issue

iv. Treasury Bills

Treasury bills commonly referred to as T-Bills are issued by the Government of India against their short-term borrowing requirements with maturities ranging between 14 to 364 days.

All these are issued at a discount-to-face value. For example a Treasury bill of Rs. 100.00 face value issued for Rs. 91.50 gets redeemed at the end of its tenure at Rs. 100.00.

Who can invest in T-Bill?

Banks, Primary Dealers, State Governments, Provident Funds, Financial Institutions, Insurance Companies, NBFCs, FIIs (as per prescribed norms), NRIs & OCBs can invest in T-Bills.

v. Repos

It is a transaction in which two parties agree to sell and repurchase the same security. Under such an agreement the seller sells specified securities with an agreement to repurchase the same at a mutually decided future date and a price. The Repo/Reverse Repo transaction can only be done at Mumbai between parties approved by RBI and securities as approved by RBI (Treasury Bills, Central/State Govt securities).

3 MUTUAL FUNDS

Instead of directly buying equity shares or other securities, an investor can participate in various schemes floated by mutual funds, which in turn invest in equity shares and fixed income securities. These can be classified into;

i. Open-ended scheme

An **open-ended Mutual fund** is available for subscription and repurchase continuously. These Funds do not have a **fixed maturity period**. Investors can conveniently buy and sell units at **Net Asset Value (NAV)** related prices which are declared daily. The key feature of open-end schemes is liquidity

ii. close-ended scheme

A close-ended Mutual fund has a stipulated maturity period e.g. 5-7 years. The fund is open for subscription only during a specified period at the time of the launch of the scheme.

iii. Income scheme

Income funds aim to provide regular and steady income to investors. Such schemes generally invest in fixed income securities such as bonds, corporate debentures, Government securities, and money market instruments. Such funds are less risky compared to equity schemes.

iv. Growth scheme

Growth funds are those mutual funds that aim to achieve capital appreciation by investing in growth stocks.

v. Balanced scheme

Balanced funds aim to provide both growth and regular income as such schemes invest both in equities and fixed income securities in the proportion indicated in their offer documents. These are appropriate for investors looking for moderate growth. They generally invest 40-60% in equity and debt instruments. These funds are also affected because of fluctuations in share prices in the stock markets.

vi. Tax saving scheme

These schemes offer tax rebates to the investors under specific provisions of the Indian Income Tax laws as the Government offers tax incentives for investment in specified avenues. Investments made in Equity Linked Savings Schemes (ELSS) and Pension Schemes are allowed as deduction u/s 88 of the Income Tax Act, 1961.

vii. Money market scheme

A money market fund is a mutual fund that invests solely in money market instruments. Money market instruments are forms of debt that mature in less than one year and are very liquid.

4 LIFE INSURANCE

The basic customer needs to be met by life insurance policies are protection and savings. Policies that provide protection benefits are designed to protect the policyholder from uncertain events such as death, disability, etc. In practice, many policies provide a mixture of saving and protection benefits. The common type of life insurance policies are;

Endowment plan

Combining risk cover with financial savings, endowment policies are among the popular life insurance policies. Policyholders benefit in two ways from a pure endowment insurance policy. In case of death during the tenure, the beneficiary gets the sum assured. If the individual survives the policy tenure, he gets back the premiums paid with other investment returns and benefits like bonuses.

Money-back plan

This life insurance policy is favored by many people because it gives periodic payments during the term of the policy. In other words, a portion of the sum assured is paid out at regular intervals. If the policyholder survives the term, he gets the balance sum assured. In case of death during the policy term, the beneficiary gets the full sum assured.

Unit linked plan

ULIPs are market-linked life insurance products that provide a combination of life cover and wealth creation options. A part of the amount that people invest in a ULIP goes toward providing life cover, while the rest is invested in the equity & debt instruments for maximizing returns. They provide the flexibility of choosing from a variety of fund options depending on the customers' risk appetite. One can opt from aggressive funds (invested largely in the equity market with the objective of high capital appreciation) to conservative funds (invested in debt markets, cash, bank deposits, and other instruments, to preserve capital while providing steady returns). ULIPs can be useful for achieving various long-term financial goals such as planning for retirement, child's education, marriage, etc.

Term assurance

A term insurance policy is a pure risk cover policy that protects the person insured for a specific period. In such type of a life insurance policy, a fixed sum of money called the Sum Assured is paid to the beneficiaries (family) if the policyholder expires within the policy term. For instance, if a person buys a Rs 2 lakh policy for 15 years, his family is entitled to the sum of Rs 2 Lakh if he dies within those 15 years.

Immediate Annuity

A plan that gives you the benefit of lifetime income. With this unique plan, one can start getting their annuity immediately after paying the premium.

Deferred Annuity

A deferred annuity is a type of annuity contract that allows for periodic contributions to the plan but does not allow any withdrawals from the plan until either an appointed time is reached or a specific event takes place. For example, a deferred annuity plan may be put in place early in life and receive payments regularly until the point of retirement. At that point, contributions cease and the holder of the annuity account begins to receive regular income payments that are funded from the balance in the plan.

Riders

Riders are the additional benefits that you may buy and add to your policy. They are options that allow you to enhance your insurance cover, qualitatively and quantitatively. Riders can be mixed and matched based on one's preferences for a small additional cost. Ex: life insurance policy with the mediclaim.

NON-MARKETABLE FINANCIAL ASSETS: a good portion of financial assets of individual investors is held in the form of non-marketable financial assets, they represent personal transactions between the investor and the issuer. These can be classified into;

5 BANK DEPOSITS

Savings account

Allows save money for the future, this popular account type also helps to gain an interest Savings bank account allows its users to draw money in form of cheques or through Automatic Teller Machines (ATM) in India. However, countries like the United States, cannot issue a cheque with a savings account.

Current Bank Accounts

A current bank account is a non-interest-bearing account that is used mainly for transactions. This cheque-operated account is opened by businessmen, companies, and firms purely for business purposes. Deposits and withdrawals can be made infinitely, but a comparatively higher minimum balance has to be maintained.

Fixed Deposit Accounts

Customers deposit in a fixed deposit account for a fixed period at a fixed rate of interest. Money cannot be withdrawn from such accounts before the period ends, though some banks allow withdrawal by paying a penalty fee.

6 POST OFFICE DEPOSITS

Post office saving account

A post office saving account is similar to a savings account in a bank. The account can be opened at any post office with a minimum balance of Rs. 20. Maximum of Rs. one lakh for the single account holder and Rs. two lakhs for joint account holders can be deposited. There is no lock-in or maturity period. The rate of interest is decided by the Central Government from time to time. Interest is calculated on monthly balances and credited annually. Income tax relief is available on the amount of interest under the provisions of section 80L of the Income Tax Act.

Post office monthly income account

The maturity of an account is six years. Only one deposit can be made in an account. The minimum deposit limit is Rs 1000. The maximum deposit limit is Rs. 3 lakhs in the case of a single account and Rs. 6 lakhs in the case of the joint account. Interest @ 8% per annum is payable monthly. In

addition, a bonus equal to 10% of the deposited amount is payable at the time of repayment on maturity. Premature closure facility is available after one year subject to condition. Income tax relief is available on the interest earned as per limits fixed vide section 80L of Income Tax, as amended from time to time.

Post office time deposit account

Post office time deposit account is just like the bank fixed deposit account. These time deposits are meant for those investors who want to deposit a lump sum for a fixed period. A time deposit account can be opened at any post office with a minimum deposit of Rs. 200. There is no maximum limit for the account. The amount can be deposited for 1year, 2year, 3year, and 5years. The deposited amount is repayable after the expiry of the period for which it is made viz: 1 year, 2 years, 3 years, or 5 years. Interest is calculated on a quarterly compounding basis and is payable annually. The rate of interest varies according to the period of the deposit and is decided by the central government from time to time. Income tax relief is available on the amount of interest under the provisions of section 80l of the income tax act.

National Savings Certificate

National Savings Certificate, popularly known as NSC, is a time-tested tax saving instrument that combines adequate returns with high safety. National Savings Certificates are available in the denominations of Rs. 100, Rs 500, Rs. 1000, Rs. 5000, & Rs. 10,000. There is no maximum limit on the purchase of the certificates. Income tax relief is also available on the interest earned as per limits fixed vide section 80L of Income Tax, as amended from time to time.

Public Provident Fund

Public Provident Fund, popularly known as PPF, is a savings cum tax saving instrument. It also serves as a retirement planning tool for many of those who do not have any structured pension plan covering them. Public Provident Fund accounts can be opened at designated post offices throughout the country and designated branches of Public Sector Banks throughout the country. The minimum deposit required in a PPF account is Rs. 500 in a financial year. The maximum deposit limit is Rs. 70,000 in a financial year. The maximum number of deposits is twelve in a financial year. The account matures for closure after 15 years. Income Tax rebate is available "on the deposits made", under Section 88 of Income Tax Act, as amended from time to time. Interest credited every year is tax-free.

Kisan Vikas Patra

Kisan Vikas Patra (KVP) is a saving instrument that provides interest income similar to bonds. Amount invested in Kisan Vikas Patra doubles on maturity after 8 years & 7 months. Kisan Vikas Patra is available in the denominations of Rs 100, Rs 500, Rs 1000, Rs 5000, Rs. 10,000 & Rs. 50,000. There is no maximum limit on the purchase of KVPs. Premature encashment of the certificate is not permissible except at a discount in the case of the death of the holder(s), which can be pledged. No income tax benefit is available under the Kisan Vikas Patra scheme.

7 COMPANY DEPOSITS

Company fixed deposit (CFD) is a deposit with financial institutes and NBFCs for a fixed rate of return over a fixed period. The rate of interest is determined by the tenure of the deposit as well as other factors. The deposit made in a CFD is governed by section 58A of the Companies Act. CFDs are a good option for investment as they provide a higher rate of interest compared to bank deposits. They are a good source of regular income through monthly, quarterly, half-yearly, or yearly interest incomes. However, these deposits are not secured like those in the bank. In case of default by a company, the investor cannot sell the deposit documents to recover his amount. The investor has no claim over the assets of the company in case the company is wound-up.

8 NON-FINANCIAL INVESTMENT

Real estate

For the bulk of the investors the most important asset in their portfolio is a residential house, in addition to the residential house, the more affluent investors are likely to be interested in the following types;

- 1. Agriculture land
- 2. Semi-urban land
- 3. Commercial property

Precious objects

These are items that are generally small in size but highly valuable in monetary terms. Some important precious objects are Gold and Silver.

- 1. Gold and silver
- 2. Precious stones
- 3. Art objects

9 FINANCIAL DERIVATIVES

A financial derivative is an instrument whose value is derived from the value of an underlying asset. It may be viewed as a side bet on the asset. The important financial derivatives are:

1. Futures

A **futures contract** is a standardized contract between two parties to buy or sell a specified asset of standardized quantity and quality for a price agreed today (the *futures price* or strike price) with delivery and payment occurring at a specified future date, the *delivery date*. The contracts are negotiated at a futures exchange, which acts as an intermediary between the two parties. The party agreeing to buy the underlying asset in the future, the "buyer" of the contract, is said to be "long", and the party agreeing to sell the asset in the future, the "seller" of the contract, is said to be "short".

2. Forwards

Forward contracts are similar to futures contracts. The contract holder is under the obligation to fulfil the contract. However, these contracts are not standardized and do not trade on the exchange. Forward contracts are over the counter contracts. As a result, these are customized contracts to suit the requirements of the buyers and sellers (parties to the contract).

3. Options

An **option** is a derivative financial instrument that specifies a contract between two parties for a future transaction on an asset at a reference price (the strike). The buyer of the option gains the right, but not the obligation, to engage in that transaction, while the seller incurs the corresponding obligation to fulfill the transaction. The price of an option derives from the difference between the reference price and the value of the *underlying* asset (commonly a stock, a bond, a currency, or a futures contract) plus a premium based on the time remaining until the expiration of the option. Other types of options exist, and options can in principle be created for any type of valuable asset.

4. Swap

Swaps are private agreements between two parties to exchange cash flows in the future according to a prearranged formula. They can be regarded as portfolios of forward contracts. The two commonly used swaps are:

•Interest rate swaps: This entail swapping only the interest related cash flows between the parties in the same currency

•Currency Swaps: These entail swapping both principal and interest on different currency than those in the opposite direction

SECURITIES MARKET

SECURITIES MARKET

It is the market for equity, debt, and derivatives.

Stock exchanges

- <u>Stock market</u>" is a term used to describe the physical location where the buying and selling of stocks take place.
- The correct term to be used about the physical location for trading stocks is "stock exchange."
- The Stock market in India consists of approximate twenty-two stock exchanges.
- The stock exchanges constitute a market where securities issued by the Central & State Govt., Public bodies & Joint Stock companies are traded.

PARTICIPANTS IN THE SECURITY MARKET

• Regulators

The key agencies that have a significant regulatory influence, direct or indirect, over the securities market are currently: The company law board, the reserve bank of India, Securities exchange board of India, The department of economic affairs, the department of company affairs.

• Stock exchanges

It is an institution where securities that have already been issued are bought and sold.

• Listed securities

Securities that are listed on various stock exchanges and eligible for being traded there are called listed securities. Presently about 10,000 securities are listed on all the stock exchanges.

• Depositories

It is an Institution that dematerializes physical certificates and affects the transfer of ownership by electronic book entries. They are NSDL and CSDL.

• Brokers

These are registered members of the stock exchanges through whom investors transact.

• FII's

Institutional investors from abroad who are registered with SEBI to operate in the Indian capital market are called FII's. There are about 600 of them.

• Merchant bankers

Firms that specialize in managing the issue of securities. They have to register with SEBI.

• Mutual funds

It is a vehicle for collective investment. It pools and manages the funds of investors.

Custodians

It looks after the investment back office of a mutual fund. It receives and delivers securities, collects income, distributes dividends, and segregates the assets between the schemes.

• Underwriters

An underwriter agrees to subscribe to a given number of shares in the event the public subscription is inadequate.

• Bankers to an issue

Collects money on behalf of the company from the applicants.

• Credit rating agencies

Assigns ratings primarily to debt securities.

• Debenture trustees

Ensures that the borrowing firm fulfills its contractual obligations.

• Venture capital funds

It is a pool of capital that is essentially invested in equity shares or equity-linked instruments

PRIMARY MARKET

It is a market where companies issue the share freshly.

Features of primary market

- This is the market for new long-term equity capital. The primary market is the market where the securities are sold for the first time. Therefore, it is also called the new issue market (NIM).
- In a primary issue, the securities are issued by the company directly to investors.
- Primary issues are used by companies to set up new business or for expanding or modernizing the existing business.
- The primary market performs the crucial function of facilitating capital formation in the economy.
- The new issue market does not include certain other sources of new long term external finance, such as loans from financial institutions. Borrowers in the new issue market may be raising capital for converting private capital into public capital; this is known as "going public."
- The financial assets sold can only be redeemed by the original holder.

Objectives of new issues

- To promote a new company
- To expand an existing company
- To diversify the production
- To meet the regular working capital requirements

• To capitalize the reserves

ISSUE MANAGEMENT

Management of issues involves the marketing of corporate securities, that is, equity shares, preference shares, debentures, or bonds by offering them to the public. Merchant banks act as intermediaries whose job is to transfer capital from those who own it to those who need it.

The issue function may be broadly classified into pre-issue management and post-issue management. In both stages, legal requirements have to be complied with and several activities connected with the issue have to be coordinated.

The pre-issue management is divided into:

- (i) Issue through prospectus, offer for sale, and private placement.
- (ii) Marketing and underwriting.
- (iii) Pricing of issues.

a. Public Issue through Prospectus

- (a) The most common method of the public issue is through the prospectus.
- (b) Offers for sale are offers through the intermediary of the issue house or firm of a stock broker. The company sells the entire issue of shares or debentures to the issuing house at an agreed price which is generally below the par value.
- (c) The direct sale of securities by a company to investors is called private placement. The investors include LIC, UTI, GIC, SFC, etc.

To bring out a public issue, Merchant bankers have to coordinate the activities relating to issue with different government and public bodies, professionals, and private agencies. They have to ensure that the information required by the Companies ACT and SEBI are furnished in the prospectus and get it vetted by a reputed solicitor.

The copies of the consent of experts, legal advisors, attorneys, and solicitors, bankers to the issue, brokers, and underwriters are to be obtained from the company making the issue to be filed along with prospectus to the Registrar of Companies.

Brokers to the Issue canvass subscription by mailing the literature to the clients and undertaking wide publicity. Members of the stock exchange are appointed as brokers to issue.

Bankers to issue accept applications along with subscriptions tendered at their designated branches and forward them to the Registrar.

b. Marketing

After dispatching of a prospectus to SEBI, the Merchant bankers arrange a meeting with company representatives and advertising agents to finalize arrangements relating to the date of opening and closing of issue, registration of prospectus, launching publicity campaign, and fixing date of the board meeting to approve and sign prospectus and pas the necessary resolutions.

The publicity campaign covers the preparation of all publicity material and brochures, prospectus, announcement, advertisement in the press, radio, T.V., investor conference, etc. the merchant bankers help choose the media, determining the size and publication in which the advertisement should appear.

The merchant banker's role is limited to deciding the number of copies to be printed, checking the accuracy of statements made, and ensuring that the size of the application form and prospectus is confirmed to the standard prescribed by the stock exchange. The merchant banker has to ensure that the material is delivered to the stock exchange at least 21 days before the issue opens and to brokers to the issue, branches of brokers to the issue, and underwriters on time.

Security issues are underwritten to ensure that in case of subscription the issues are taken up by the underwriters. SEBI has made underwriting mandatory for issues to the public. The underwriting arrangement should be filed with the stock exchange. Particulars of underwriting arrangements should be mentioned in the prospectus.

The various activities connected with pre-issue management are a time-bound program that has to be promptly attended to. The execution of the activities with clockwork efficiency would lead to a successful issue.

c. Pricing of Issues

The SEBI guidelines 1992 for capital issues have opened the capital market to free pricing of issues. Pricing of issues is done by companies themselves in consultation with merchant bankers. Pricing of the issue is part of pre-issue management.

An existing listed company and a new company set by an existing company with a five year track record and existing private closely held company and existing unlisted company going in for public issues for the first time with a two and a half years track record of constant profitability can freely price the issue. The premium has to be decided after taking into account net asset value, profitearning capacity, and market price. The justification of price has to be stated and included in the prospectus.

POST ISSUE MANAGEMENT

The post-issue management consists of a collection of application forms and statements of the amount received from bankers screening applications, deciding allotment procedure, mailing of allotment letters, share certificates, and refund orders.

Registrars to the issue play a major role in post-issue management. They receive the applications, verify them and submit the basis of allotment to the stock exchange. After the basis of allotment is approved by the stock exchange and allotted by the Board, the auditor/company secretary has to certify that the allotment has been made by the company as per the basis of allotment approved by the exchange. Registrars have to ensure that the applications are processed and the allotment/refund orders are sent within 70 days of the closure of the issue. The time limit of 70 days has proved difficult to adhere and applicants have to wait anytime between 90 to 180 days. Merchant bankers assist the company by coordinating the above activities.

Underwriting of Public Issue

Underwriting is a guarantee given by the underwriter that in the event of under subscription the amount underwritten would be subscribed by him. It is insurance to the company which proposes to make a public offer against the risk of under subscription. The issues backed by well-known underwriters generally receive a higher premium from the public. This enables the issuing company to sell the securities quickly.

All public issues have to be fully underwritten. The only category I, II, and III merchant bankers are permitted to underwrite an issue subject to the limit that the outstanding commitments of any such individual merchant banker at any point of time do not exceed five times of his net worth (paid-up and free reserves excluding revaluation reserves). This criterion applies to brokers also. Lead managers have to underwrite mandatorily 5% of the issue or 2.5 lakhs whichever is less. Banks/ Merchant banker subsidiaries cannot underwrite more than 15% of any issue.

By ensuring a direct in the underwriting, the merchant bankers make raising money from external resources easy.

MODES OF RAISING FUNDS

- Public issue
- Rights issue
- Preferential allotment

Public Issue

It involves the sale of securities to the public at large. Public issues in India are governed by the provisions of the companies act, 1956, SEBI guidelines on investors protection, and the listing agreement between the issuing company and the stock exchanges.

The issue of securities to members of the public involves the following steps:

- Approval of the board of directors
- Approval of shareholders
- Appointment of the lead manager
- Due diligence by the lead manager
- Appointment of other intermediaries like co-managers, advisors, underwriters, bankers, brokers, and registrars.
- Preparation of the draft prospectus
- Filling of the draft prospectus
- Application for listing in stock exchanges
- Filing of the prospectus
- Promotion of the issue
- Printing and distribution of applications
- Statutory announcement
- Collection of applications
- Processing of applications
- Determination of the liability of underwriters
- Finalization of allotment
- Giving of Demat credit and refund orders
- Listing of the issue.

An investor should be familiar with the following aspects of public issues:

• A company informs the public

- If the issue is oversubscribed the pattern of allotment should be decided
- The balance amount to be called by one or two calls
- If the investor fails to pay the shares are liable to be forfeited
- The shares are entitled to dividends from the date of allotment
- Public issue prices may be determined at a predetermined price or based on bids

Book building: The pricing mechanism in public issue

Book Building is essentially a process used by companies raising capital through Public Offeringseither Initial Public Offers (IPOs) or 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 as well as the retail investors. The issue price is determined after the bid closure based on the demand generated in the process.

The Process:

- The Issuer who is planning an offer nominates lead merchant banker(s) as 'book runners'.
- The Issuer specifies the number of securities to be issued and the price band for the bids.
- The Issuer also appoints syndicate members with whom orders are to be placed by the investors.
- The syndicate members input the orders into an 'electronic book'. This process is called 'bidding' and is similar to open auction.
- The book normally remains open for a period of 5 days.
- Bids have to be entered within the specified price band.
- Bids can be revised by the bidders before the book closes.
- On the close of the book building period, the book runners evaluate the bids on the basis of the demand at various price levels.
- The book runners and the Issuer decide the final price at which the securities shall be issued.
- Generally, the numbers of shares are fixed; the issue size gets frozen based on the final price per share.
- Allocation of securities is made to the successful bidders. The rest get refund orders.

Rights issue

A rights issue involves selling securities in the primary market by issuing rights to the existing shareholders. When a company issues additional equity capital, it has to be offered in the first instance to the existing shareholders on a pro-rata basis. This is required under sec 81 of the companies' act 1956. The procedure for rights issues is as follows

- A company sends a 'letter of offer 'A B C D
- A is for acceptance of the rights and application for additional shares
- B is for the shareholders who want to renounce the rights in favor of someone else
- C is meant for rights have been renounced by the original allottee
- D is to be used to request split forms

Preferential allotment

An issue of equity by a listed company to selected investors at a price that may or may not is related to the prevailing market price. An issue can be made only when the shareholders pass a special resolution (75% of voting rights). It is given mainly to promoters or friendly investors. Very popular means of raising fresh equity capital. The cost and uncertainty associated with the public issue are high. Sophisticated investors like mutual funds and private equity investors likely to pay a higher price. The price at which a preferential allotment of shares is made should not be lower than the higher of the average of the weekly high and low of the closing prices of the shares quoted on the stock exchange during the six months before the relevant date or during the two weeks before the relevant date.

Parties involved in the new issue

- Managers to the issue
- Registrar to the issue
- Underwriters
- Bankers to the issue
- Advertising agents
- The financial institutions

SECONDARY MARKET

A secondary market refers to a market where securities are traded after being initially offered to the public in the primary market and or listed on the stock exchange. The majority of the trading is done in the secondary market. This consists of the equity market and debt market. It is nothing but stock exchanges. We have two major stock exchanges in India. They are

- National stock exchange (NSE)
- Bombay stock exchange (BSE)

National stock exchange (NSE)

It was established in the year 1994. It is a ringless, national, computerized exchange. It has two segments: the wholesale debt market & capital market segment. The capital market segment covers equities, convertible debentures, and retail trade in non-convertible debentures. The wholesale debt market segment is a market for high-value transactions in government securities, commercial papers, and other debt instruments. NSE is the first exchange in the world to employ satellite technology. A satellite link-up is called VSAT (A very small aperture terminal). All trades on NSE are guaranteed by the national securities clearing corporation.

The **S&P CNX Nifty** (Nifty **50** or simply **Nifty**) is a composite of the top 50 stocks listed on the National Stock Exchange (NSE), representing 24 different sectors of the economy. Nifty was developed by the economists Ajay Shah and Susan Thomas, then at IGIDR. Later on, it came to be owned and managed by India Index Services and Products Ltd. (IISL), which is a joint venture between NSE and CRISIL. IISL is India's first specialized company focused upon the index as a core product. IISL has a consulting and licensing agreement with Standard & Poor's (who are world leaders in index services. CNX stands for CRISIL NSE Indices. CNX ensures common branding of indices, to reflect the identities of both the promoters, i.e. NSE and CRISIL. Thus, 'C' stands for CRISIL, 'N' stands for NSE and X stands for Exchange or Index. The S&P prefix belongs to the US-based Standard & Poor's Financial Information Services. It is calculated as a weighted average, so changes in the share price of larger companies have more effect. The base is defined as 1000 at the price level of November 3, 1994.

BOMBAY STOCK EXCHANGE (BSE)

Established as "The Native Share & Stock Brokers' Association" in 1875. Oldest stock exchange in Asia. Today, BSE is the world's number 1 exchange in terms of the number of listed companies & the world's 5th in transaction numbers. BSE has two of the world's best exchanges, Deutsche Börse and Singapore Exchange, as its strategic partners. The BSE Index, SENSEX, is India's first stock market index that enjoys an iconic stature and is tracked worldwide. BSE Sensex is a valueweighted index composed of 30 stocks. It consists of the 30 largest and most actively traded stocks, representative of various sectors. SENSEX is calculated using the "Free-float Market Capitalization" methodology. The base period of SENSEX is 1978-79 and the base value is 100 index points. SENSEX is calculated every 15 seconds. The BSE switched from the open outcry system to the screen-based system in 1995 which is called BOLT (BSE online trading).

TRADING AND SETTLEMENT

Each stock exchange has certain listed securities and permitted securities that are traded on it. Investors interested in buying and selling securities should place their orders with the members (also called brokers) of the exchange.

Steps of Trading Procedure

The trading procedure involves the following five steps:

- 1. Selecting a Broker: The stock market involves trading through only authorised brokers. These brokers can be individuals, companies, or even partnerships. To begin the trading process, one should select a registered broker.
- 2. Opening a Demat Account: De mat is short for dematerialised. The Demat account is opened with the help of depositories, which include brokers and banks. It is through this account that trading activities take place. This is an electronic system. The depository helps keep the investor or account holder informed about their transactions and the status of their investments.
- 3. Placing an Order: Once a Demat account is opened, investors can place orders in different ways, such as through brokers or themselves. The order comprises the buying and selling of shares in the stock market.
- 4. Execution of the Order: Once an order is placed, it is executed by the broker. Once executed, a contract note is issued, which informs the investor of all transaction details or orders, such as date, time, and amount.

5. Settlement: This is the final step in the trading procedure. It involves the actual transfer of securities between the buyer and the seller. This also needs to be carried out by the broker. The two main kinds of settlement are On-the-spot settlement, where funds are immediately transferred and exchanged on the second working day of the transaction, and Forward settlement, which implies that the transfer or exchange will be carried out at some point in the future.

There are two ways of organizing the trading activity: the open outcry system and the screen-based system

• Open outcry system

Traders shout and resort to signals on the trading floor of the exchange which consists of several 'notional' trading posts for different securities. A member wishing to buy or sell certain security reaches the trading post where the security is traded. Here, he comes in contact with others interested in transacting in that security. Buyers make their bids and sellers make their offers and bargains are closed at mutually agreed-upon prices.

• Screen-based system

The trading ring is replaced by the computer screen and distant participants can trade with each other through the computer network. A large number of participants, geographically separated, can trade simultaneously at high speeds.

Buyers and sellers place their orders on the computer. These orders may be limit orders or market orders. A limit order pre specifies the price limit. For example, a limit order to buy at a price of Rs.90 means that the trader wants to buy at a price not greater than Rs.90. Likewise, a limit order to sell at a price of Rs.95 means that the trader wants to sell at a price not less than Rs.95. A market order is an order to buy or sell at the best prevailing price. A market order to sell will be executed at the highest bid price whereas a market order to buy will be executed at the lowest ask price. The computer constantly tries to match mutually compatible orders. The matching is done on a price-time priority; implying that price is given preference over time in the process of matching.

SETTLEMENT

To mitigate the costs and risks associated with physical delivery, security transactions in developed markets are settled mainly through electronic delivery facilitated by depositories. A depository is an institution that dematerializes physical certificates and effects the transfer of ownership by electronic book entries. The national securities depository limited, India's first depository, was set up in 1996. It was followed by the central securities depositories limited.

- Every depository is required to register with SEBI.
- Investors are required to register with the agents of the depositories.
- Shares in the depository mode will be fungible.
- Ownership changes in the depository system will be made automatically based on delivery against payment
- Any loss caused by the depository to the investors due to negligence will be indemnified by the depository

Shifting to rolling settlement

The weekly settlement system along with the badla system of carrying forward transactions from one account period to the next, according to many informed observers of the Indian stock market, led to unbridled speculative activity and periodic market crises. So, SEBI decided to introduce rolling settlement in a phased manner from 2002. Under the compulsory rolling system now in vogue, every day represents a new settlement period. The trading cycle which was earlier one week has been reduced to one day. :

	ACTIVITY	DAY
Trading	Rolling Settlement Trading	Т
Clearing	Custodial Confirmation	T+1 working days
	Delivery Generation	T+1 working days
Settlement	Securities and Funds pay in	T+1 working days
	Securities and Funds pay out	T+1 working days
	Valuation Debit	T+1 working days
Post Settlement	Auction	T+1 working days
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	Auction settlement	T+2 working days

TRANSACTION COSTS

Transaction costs may be divided into three broad categories: Trading costs, clearing costs, and settlement costs.

Trading costs

It consists of brokerage cost, market impact cost, and securities transaction tax. A brokerage cost is a brokerage paid to the broker. Due to high competition in stockbroking, brokerage costs have fallen significantly. Market impact cost is the difference between the actual transaction price and the ideal price, the latter being defined as the price at which the trade will occur if the market for the stock were perfectly liquid or infinitely deep. Suppose a stock trades at bid 99 and asks 101. We say the "ideal" price is Rs. 100. Now, suppose a buy order for 1000 shares goes through at Rs.102. Then we say the market impact cost is 2%. **Securities Transaction Tax (STT)** is a tax being levied on all transactions done on the stock exchanges. Securities Transaction Tax is applicable on the purchase or sale of equity shares, derivatives, equity-oriented funds, and equity-oriented Mutual Funds. Currently, for delivery-based trades in equity, the levy is 0.25% and the same is to be split equally between the buyer and the seller.

Clearing costs

When a negotiated trade takes place, the counterparty may default or when a trade takes place on an exchange, the exchange may default in its payout. Clearing costs are costs experienced in resolving such defaults.

Settlement costs

Costs associated with the transfer of funds and securities. With the advent of dematerialization, elimination of stamp duty on dematerialized trades, and improvement of banking technology, settlement costs have come down substantially. As of mid-1993, the total transaction cost in the Indian market was 5%; presently it s around 0.5%.

BUYING ON MARGIN

We can buy shares on margin. This means that we provide a portion of the purchase value as margin and the rest is given by the broker as a loan to us. For example, if we have a margin account with ICICI securities we can get a loan up to 75% of the purchase value. So the margin account has a balance of Rs.25, 000 and he can buy shares up to Rs.1, 00000. This is called as *initial percentage margin*.

There may be a chance that the margin account balance turns negative. To guard against such a thing, the broker prescribes a *maintenance margin*, if the maintenance margin falls below the maintenance margin, the broker will issue a margin call asking to deposit a different amount in the margin account.

Short sale

It is a sale of shares that one does not have. A short seller expects the price of the shares to fall in the future so that he can square his position at a profit. If the price rise, inflicting a loss on the short seller. A short sale is arranged by the broker who borrows shares from another customer or broker so that the short seller can affect delivery. The short seller has to buy back the shares in the future to replace the borrowed shares and repay any dividend that may have been paid on the shares.

INDEX CALCULATION

Price weighted index: it is an index reflecting the sum of the prices of the sample stocks on a certain date concerning a base date. The price-weighted index assumes that the investor buys one share of each stock included in the index.

Equal weighted index: it is an index reflecting the simple arithmetic average of the price relatives of the sample stocks on a certain date in relation to a base date. It assumes that the investor invests an equal amount of money in each stock included in the index.

Value weighted index: It is an index reflecting the aggregate market capitalization of the sample stocks on a certain date in relation to a base date. It assumes that the investor allocates money across various stocks included in the index in such a way that the weights assigned to various stocks are proportional to their market capitalization.

STOCK MARKET INDICES AROUND THE WORLD

• The Dow Jones industrial average (DJIA) is based on 30 large, "blue chip" corporations in the US. It is a price-weighted Index.

- The Standard and Poor's composite 500 (S&P 500) stock index is a broad-based index of 500 US stocks. It is a market value-weighted index.
- The Nikkei 225 is based on the largest 225 stocks of the Tokyo stock exchange. It is a price-weighted index.
- FTSE published by the financial times of London is based on 100 large stock exchange stocks. It is a value-weighted index.

STOCK MARKET ABROAD

The two largest stock exchanges in the US, as well as the world, are the New York stock exchange and the NASDAQ.

New York stock exchange

World's biggest stock exchange in terms of market capitalization. Only large, financially strong companies get listed.

NASDAQ

It is a short form for the national association of securities dealers' automated quotation system. It is the biggest stock exchange in the world in terms of turnover. Technology heavyweights like Cisco, Intel, and Microsoft have their listing only on NASDAQ.

The stock market in the UK

An amalgamation of all the stock exchanges in the UK had led to the emergence of a single exchange is called the "big bang". Equities are traded on this market using the stock exchange quotation system (SEAQ), a quote-driven system, or the stock exchange automatic execution facility (SEAF), an order-driven system.

The stock market in Japan

The Tokyo stock exchange (TSE) is the dominant exchange in Japan, accounting for about 1200 most actively traded stocks; the second section consists of about less actively traded stocks.

Emerging stock markets

The first group represents markets in Africa (Kenya, Zimbabwe), Eastern Europe (Hungary, Poland). These markets are in the early stages of development. The second group markets in countries like Brazil, India, the Philippines, and China. These markets are fairly developed with a large number of listed companies. The third group represents more mature markets like Hong Kong, Korea, and Singapore.

REFORMS IN THE INDIAN CAPITAL MARKET

Freedom in designing and pricing Instruments

Companies now enjoy freedom in designing the instruments of financing as long as they fully disclose the character of the same.

Ban on badla

To rectify the defects in trading practices, the badla system has been banned

Screen-based trading

With the competition posed by the NSE and the insistence done by SEBI, all the stock exchanges have switched to screen-based trading.

Electronic transfer

The shares and the money is transferred electronically by the depositories

Risk management

A comprehensive risk management system that covers capital adequacy, limits on exposure and turnover, margins based on VAR(Value at risk), client level gross margining, and online monitoring has been introduced.

Rolling settlement

The trading cycle has been reduced from one week to one day and the system of rolling settlement has been introduced.

Registration and regulation of intermediaries

Intermediaries such as merchant bankers, underwriters, bankers, registrars are required to be registered with SEBI.

Redressal of Investor Grievances

With the steps taken by the SEBI the redressal ratio (the ratio of complaints resolved to complaints received) has improved.

Regulation of mutual funds

Mutual funds have been brought under the purview of SEBI and SEBI has issued the regulatory guidelines for this purpose.

Regulation of foreign portfolio investment

SEBI has formulated guidelines to permit the investment through broad-based funds (such as mutual funds, pension funds, and country funds) referred to as foreign institutional investors.

Introduction of equity derivatives

SEBI has allowed the introduction of equity derivatives like stock index futures, stock index options, etc.

Integrated market surveillance system.

SEBI has launched an IMSS in December 2006. IMSS integrates data from stock exchanges, depositories, and clearing corporations and comes up with alerts, based on certain pre-specified parameters. Such integration of data has been done for the first time in any market in the world.SEBI can detect capital market offenses like market domination and control, artificial rigging, and the creation of a false market.

IMPORTANT POINTS TO REMEMBER

Companies close their transfer books only once a year at the time of the annual general meeting and to have record dates for bonus issues, rights issues, etc. Have uniform dates of book closing and record dates either on 1st or 6th of any month and to give to the exchange notice in advance of at least 42 days. Issue letters of allotment or letters of rights within six weeks of the record date. On the stock market, the shares become ex-dividend (or ex-bonus or ex-rights) several days before the book closure date. This is indicated by the abbreviation 'xd' affixed after the price of the share. If we buy the 'xd' we are not entitled to dividends for which books are about to be closed.

Block deals

It is a deal involving a minimum quantity of five lakh shares or a minimum value of Rs. 5crore. There is a separate window for block deals on BSE and NSE. These deals can take place only between 9.55 am and 10.25 am. It involves simultaneous large-scale buy and sells transactions at a predetermined price.

Demutualization

Till the early 1990s almost all stock exchanges were mutual ventures, owned cooperatively by members who enjoyed trading privileges. From 1993, a number of smaller exchanges resorted to demutualization. They transformed themselves into profit-making companies and issued shares to outsiders.

Red herring prospectus

The firm files a preliminary registration statement (preliminary prospectus) with SEC. It is also called a red herring as it includes a statement printed in red stating that the company is not attempting to sell the security before SEC approves its registration statement.

MODULE 2: RISK AND RETURN

Return and Risk Concepts: Concept of Risk, Causes of Risk, Types of Risk- Systematic risk-Market Price Risk, Interest Rate Risk, Purchasing Power Risk, Unsystematic Risk- Business risk, Financial Risk, Insolvency Risk, Risk-Return Relationship, Concept of diversifiable risk and nondiversifiable risk. Calculation of Return and Risk of Individual Security & Portfolio (Theory & Problems).

Risk and Return: Two Sides of the Investment Coin

Investment decisions involve a tradeoff between risk and return and are central to investment decisions.

RETURN

Return is the primary motivating force that drives investment. It represents the reward for undertaking investment.

Components of returns are current return and capital return

Current return is the periodic income, such as dividends or interest, generated by the investment.

It is measured as the periodic income in relation to the beginning price of the investment.

Capital return is reflected in the price change it is simply the price appreciation (or depreciation) divided by the beginning price of the asset.

Total return = Current return + Capital return

RISK

Risk refers to the possibility that the actual outcome of an investment will deviate from its expected outcome.

- Possibility of loss or injury
- Variability of return
- The degree of probability of loss

Causes of Risk

- Wrong decision or Wrong timing
- Term of Investment Long term investments are more risky than short-term investments as future is uncertain.
- Level of Investment Higher the quantum of investment the higher is the risk.
- Nature of Industry Risk is higher in speculative and cyclical industries while less in defensive and growth industries.
- Political and Legal factors Risk may arise due to changes in government policy and legislative regulations in a country.

Components of risk

Systematic risk: Caused by factors external to the company and uncontrollable by the company. Interest rates, recession, and wars all represent sources of systematic risk because they affect the entire market and cannot be avoided through diversification. Whereas this type of risk affects a broad range of securities, unsystematic risk affects a very specific group of securities or individual security. Systematic risk can be mitigated only by being hedged.

 Unsystematic risk: Factors are specific, unique, and related to the particular industry or company. Company or industry-specific risk that is inherent in each investment. The amount of unsystematic risk can be reduced through appropriate diversification. Also known as "specific risk", "diversifiable risk" or "residual risk".



Systematic risk

- Market risk: The portion of the total variability of a return caused by the alternative forces of bull and bear markets. When the index moves upward halting for a significant period is known as a bull market. In bull market index moves from a low level to a peak. In bear market index declines from the peak to a market low point called trough. During the bull and bear market, more than 80% of the price rise or falls with the stock market indices. The forces that affect the stock market are tangible and intangible events. The tangible events are real events such as earthquake, war, and fall in the value of the currency. Intangible events are related to market psychology.
- Interest rate risk: Interest rate risk is the risk that an investment's value will change as a result of a change in interest rates. This risk affects the value of bonds more directly than stocks. As interest rates rise, bond prices fall and vice versa. The rationale is that as interest rates increase, the opportunity cost of holding a bond decreases since investors can realize greater yields by switching to other investments that reflect the higher interest rate. For example, a 5% bond is worth more if interest rates decrease since the bondholder receives a fixed rate of return relative to the market, which is offering a lower rate of return as a result of the decrease in rates.
- **Purchasing power risk:** The risk that unexpected changes in consumer prices will penalize an investor's real return from holding an investment. Because investments from gold to bonds and stock are priced to include expected inflation rates, it is the unexpected changes that produce this risk. Fixed income securities, such as bonds and preferred stock, subject investors to the greatest amount of purchasing power risk since their payments are set at the time of issue and remain unchanged regardless of the inflation rate
- **Default risk:** The event in which companies or individuals will be unable to make the required payments on their debt obligations. Lenders and investors are exposed to default risk in virtually all forms of credit extensions. To mitigate the impact of default risk, lenders often charge rates of return that correspond to the debtor's level of default risk. The higher the risk, the higher the required return, and vice versa.

Unsystematic risk

Business risk: it is the portion of the risk caused by the operating environment of the business. It arises from the inability of a firm to maintain its competitive edge and the growth or stability of the earnings. The business risk is concerned with the difference between revenue and earnings before interest and tax. It can be divided into external and internal business risks.

Internal business risk

It is associated with the operational efficiency of the firm. The efficiency depends on the company's achievement of its goals and the fulfillment of the promises to its investors.

- Fluctuations in sales: The sales level has to be maintained. Loss of customers will lead to a loss of operating income. A diversified sales force may help to tide over this problem. Big corporate bodies have a long chain of distribution channels. Smaller firms often lack this diversified customer base.
- Research and development: Sometimes the product goes out of style or becomes outdated. The company has to overcome this problem by concentrating on in-house research and development. The new product has to be introduced to replace the old one.
- 3. *Personnel management:* it also contributes to the operational efficiency of the firm. Frequent strikes and lockouts result in loss of production and high fixed capital cost. The labor productivity also will come down. The encouragement given to the laborers at the floor level would boost the morale of the labor force and lead to high productivity and proper utilization of resources.
- 4. *Fixed cost:* During a period of recession or low demand for the product, the company cannot reduce the fixed cost. The higher the fixed cost in a firm would become a burden to the firm. Thus the fixed cost has to be kept always reasonable so that it may not affect the profitability of the company.
- 5. *Management risk:* The risks associated with ineffective, destructive, or underperforming management, which hurts shareholders and the company or fund being managed. This term refers to the risk of the situation in which the company and shareholders would have been better off without the choices made by management.
- 6. *Default risk:* The event in which companies or individuals will be unable to make the required payments on their debt obligations. Lenders and investors are exposed to default risk in virtually all forms of credit extensions. To mitigate the impact of default risk, lenders often charge rates of return that correspond to the debtor's level of default risk.

External business risk

It is the result of operating conditions imposed on the firm beyond its control

- Social and regulatory factors: harsh regulatory and legal restrictions against the business
 may degradation the profitability of the firm. Price control, volume control, import/export
 control and environment control reduce the profitability of the firm. For example, the
 pollution control board has asked to close most of the tanneries in Tamil Nadu, which has
 affected the leather industry.
- 2. *Political risk:* It arises out of the change in government policy. With a change in the ruling party, the policy also changes. Political risk arises mainly in the case of foreign investment.
- 3. **Business cycle:** The fluctuations of the business cycle lead to fluctuations in the earnings of the company. A recession in the economy leads to a drop in the output of many industries. During the boom period, the earnings of the industries go up.

Financial risk: Financial risk is the additional risk a shareholder bears when a company uses debt in addition to equity financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly or entirely by equity. The capital structure of the company consists of equity and debt funds. The presence of debt results in a commitment to paying interest. The interest payment affects the payments that are due to the equity investors. The use of debt with the owned funds to increase the return to the shareholders is known as financial leverage. Debt financing enables the corporate to have funds at a low cost and financial leverage to the shareholders. As long as the earnings of a company are higher than the cost of borrowed funds, shareholders' earnings are increased. At the same time when the earnings are low, it may lead to bankruptcy.

Insolvency risk:

Insolvency risk is the real possibility that a company may be unable to meet its payment obligations in a defined period of time – generally within a one-year horizon. It is also known as bankruptcy risk.

CONCEPT OF DIVERSIFIABLE RISK AND NON- DIVERSIFIABLE RISK

Diversifiable risk and **non-diversifiable risk** are two key concepts in the field of finance and investing, often discussed in the context of **portfolio management** and **capital asset pricing theory (CAPM)**.

1. Diversifiable Risk (also called unsystematic risk or specific risk)

Diversifiable risk refers to the portion of total risk that is unique to an individual asset or a small group of assets. This type of risk can be reduced or eliminated by holding a diversified portfolio of assets. **Causes**: It arises from factors specific to a particular company, industry, or sector, such as:

- Company management changes
- Product recalls or failure
- Labor strikes
- Regulatory changes affecting a specific company or sector
- Technological changes affecting a firm or industry

2. Non-Diversifiable Risk (also called systematic risk or market risk)

Non-diversifiable risk refers to the risk that affects the entire market or economy, and it cannot be eliminated by diversification. This type of risk is inherent in the market and impacts all assets to some degree.

Causes: It arises from macroeconomic factors or broad market events, such as:

- Economic recessions
- Inflation
- Interest rate changes
- Political instability
- Natural disasters
- Geopolitical events (e.g., war)

MINIMIZING RISK EXPOSURE

Market risk exposure

- Study the Price behavior of the stock
- Gauge the risk factor to make a wise decision
- Hold the stock for a long period

Protection against interest rate risk

- Hold investment to maturity
- Reinvestment of interest
- Maturity Diversification can yield the best results

Protection against inflation

- Increase the bond yield
- Investment in short term securities
- Diversify the investment

Protection against business risk and financial risk

- Analyze strengths and weaknesses of the industry
- Profitability trend of the company
- Analyze the Capital structure of the company

MODULE 3: VALUATION OF SECURITIES

Bond – Meaning, features, types, determinants of interest rates, Bond Valuation, Bond Duration, Bond Management Strategies. Preference Shares- Concept, Valuation. Equity Shares- Concept, Valuation, Dividend Valuation Models, P/E Ratio valuation model. (Theory & Problems)

BOND

Promise to pay a stipulated stream of cash flows. It is a contract that requires the borrower to pay the interest income to the lender. It resembles the promissory note and issued by the government and corporate. The par value of the bond indicates the face value of the bond.

Bond characteristics

- ✓ To make specified payments
- \checkmark It described in terms of par value, coupon rate and maturity date.
- ✓ Bond indenture: Agreement between bond issuer, bond holder and intermediary who give guarantee to the bond holder and ensure that the bond issuer pays interest and principal on time.

TYPES OF BONDS

• Government bonds

The borrowers are central and state governments. The government of India periodically issues bonds which are called government securities or gilt edged securities. These are medium or long term bonds issued by the RBI on behalf of the government. Interest payments usually on semiannual. Apart from governments, a number of government agencies issue bonds that are guaranteed by the government.

• Corporate bonds

Companies issue bonds to borrow money called corporate bond. A secured corporate debt instrument is called a corporate bond where as an unsecured corporate debt instrument is called a corporate debenture.

• Straight bonds

It is also called plain vanilla bond and pays a fixed periodic semi-annual coupon over its life and returns the principal on maturity date.

• Zero coupon bonds

It does not carry any regular interest payment. It is issued at a steep discount over its face value and redeemed at face value on maturity. For example, the IDBI issued deep discount bonds in 1996 which had a face value of Rs. 200,000 and a maturity period of 25 years. The bonds were issued at Rs. 5,300.

• Floating rate bonds

It pays an interest rate that is linked to a benchmark rate such as the Treasury bill interest rate. For example, in 1993 the SBI came out with the first issue of floating rate bonds in India.

• Bonds with embedded options

Bonds may have options embedded in them. These options give certain rights to investors or issuers. **Convertible bonds** give the issuer the right to convert them into equity shares. **Callable bonds** give the issuer the right to redeem them prematurely on certain terms. **Puttable bonds** give the investor the right to prematurely sell them back to the issuer on certain terms.

• Commodity-linked bonds

The payoff from a commodity linked bond depends to a certain extent on the price of a certain commodity. For example, the payoff of the bond will be based on the price per barrel of crude oil.

Determinants of Interest Rates

The interest rates are influenced by a range of factors, including economic conditions, monetary policy, and market expectations. Below are the key determinants of interest rates:

1. Supply and Demand for Money (Market Forces)

Money Supply: The amount of money circulating in an economy is a fundamental determinant of interest rates. Central banks (such as the Federal Reserve or European Central Bank) influence the supply of money by implementing monetary policies like **open market operations** (buying and selling government bonds) and adjusting **reserve requirements** for commercial banks.

Demand for Money: The demand for money reflects the desire of businesses and individuals to borrow. If borrowing demand increases (for investments or consumption), interest rates tend to rise. If demand decreases, interest rates tend to fall.

2. Central Bank Policies

Monetary Policy: Central banks play a key role in determining interest rates through their control over the money supply. They can influence short-term interest rates through tools like:

- **Discount Rate**: The rate at which commercial banks can borrow from the central bank. A higher discount rate generally leads to higher interest rates in the broader economy.
- Open Market Operations: Buying and selling government securities to control the money supply. When a central bank buys securities, it injects money into the economy, lowering interest rates; when it sells securities, it removes money from the economy, pushing rates higher.
- Reserve Requirements: The amount of money banks are required to hold in reserve.
 Lower reserve requirements allow banks to lend more, increasing the supply of money and lowering interest rates.

Interest Rate Targeting: Central banks often set target interest rates (such as the **federal funds rate**) as a way to influence the economy. These rates set the baseline for lending between banks, which ultimately influences broader market interest rates.

3. Inflation Expectations

Inflation refers to the rate at which prices for goods and services increase. Investors and lenders demand higher interest rates when they expect inflation to rise because they want to protect the purchasing power of their money. Inflation erodes the real value of interest payments, so lenders often adjust the nominal interest rates to reflect anticipated inflation.

Real vs Nominal Interest Rates: The **real interest rate** is the rate after adjusting for inflation, and the **nominal interest rate** is the stated rate. When inflation is high, nominal rates tend to rise to maintain a positive real return for lenders and investors.

4. Economic Growth (Business Cycle)

Economic Expansion: During periods of economic growth or expansion, businesses are more likely to borrow money to invest in expansion, which increases the demand for money and tends to push interest rates higher. Similarly, consumers may borrow more to finance consumption, adding to upward pressure on rates.

Economic Contraction (**Recession**): In contrast, during a recession, the demand for borrowing may decrease due to reduced business activity and consumer spending. In this case, interest rates are often lowered to encourage borrowing and stimulate the economy.

5. Government Debt

Government Borrowing: When governments borrow large amounts of money by issuing bonds, it increases the demand for capital in the financial markets. If the government borrows extensively, this can drive up interest rates, as investors may require a higher return to compensate for the perceived risk of lending to the government.

Debt-to-GDP Ratio: Countries with high levels of debt relative to their economic output (GDP) may experience higher interest rates due to increased risk of default. Lenders demand higher returns for lending to governments with significant debt burdens.

6. Risk Premium

Credit Risk: The perceived risk of default by the borrower affects the interest rate charged. Higherrisk borrowers, such as corporations with poor credit ratings or emerging market countries, will typically face higher interest rates compared to lower-risk borrowers, such as stable governments or blue-chip companies.

Liquidity Risk: Investments that are harder to trade or less liquid may also offer higher interest rates to compensate for the additional risk of holding these assets. This is because investors demand higher returns for assets that cannot be easily sold or converted to cash.

7. Term to Maturity

Term Structure of Interest Rates (Yield Curve): The length of time until an investment matures can affect its interest rate. Generally, long-term interest rates tend to be higher than short-term rates, primarily because investors demand more compensation for tying up their money for a longer period. This is often seen in the **yield curve**, which typically slopes upwards (longer-term rates are higher).

Interest Rate Expectations: If investors expect future interest rates to rise, they may demand higher rates on longer-term loans to compensate for the anticipated increase. Conversely, if they expect rates to fall, long-term rates may be lower.

8. Global Factors

Global Interest Rates: In an increasingly interconnected global economy, interest rates in one country can influence rates in other countries. If interest rates rise in one major economy (e.g., the U.S.), capital may flow into that country from others, raising borrowing costs in other markets.

Exchange Rates: Countries with higher interest rates may attract foreign investment, which can lead to changes in exchange rates. A stronger currency may lead to lower import prices, which can have an impact on inflation expectations and, therefore, interest rates.

9. Bank Lending Behavior

Bank Risk Appetite: Banks' willingness to lend also affects interest rates. If banks are more conservative due to economic uncertainty, they may raise interest rates to offset perceived lending risks or to reduce exposure to potential defaults.

Loan Supply: When banks have more capital to lend (often due to low reserve requirements or central bank interventions), they may lower interest rates to encourage borrowing. Conversely, when banks face liquidity constraints or tighter capital requirements, they may raise rates to manage risk.

BOND PRICES

The value of the bond or any asset is equal to the present value of the cash flows expected from it. The value of a bond requires:

- Expected cash flows
- The required rate of return

The assumptions of bond valuation

- The coupon interest rate is fixed for the term of the bond
- The coupon payments are made annually
- The bond will be redeemed at par on maturity

PRICE YIELD RELATIONSHIP

The bond price varies inversely with yield. As the required yield increases, the present value of the cash flow decreases, hence the price decreases. Conversely when the yield decreases, the present value of the cash flow increases, hence the price increases.

Relationship between bond price and time

Since the price of a bond must equal its par value at maturity, the bond prices changes with time. For example a bond redeemable for Rs.1000 after five years when its matures, if the current price is 1000 it is said to be premium bond. If the current price is Rs. 900 the bond said to be discount bond. The premium and discount will disappear when it's near to the maturity period. If the current price of the bond is equal to the maturity value then it is called par value bond.

BOND YIELDS

Bonds are generally traded on the basis of their prices. They are typically compared in terms of yields. The commonly employed yield measures are: current yield, yield to maturity, yield to call and realized yield to maturity

Current yield

It relates the annual coupon rate to the market price

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Current yield = Annual interest/price
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Yield to maturity

Purchasing a bond depends on bond price, maturity date and coupon payments which help to figure out rate of return offered by the bond over its life. It is referred as Yield to Maturity (YTM) Assumptions

- There should not be any default. Coupon and principal amount should be paid as per schedule.
- The investor has to hold the bond till maturity.
- ✤ All the coupon payments should be reinvested immediately

Yield to call

Some bonds carry a call feature that entitles the issuer to call (buy back) the bond prior to the stated maturity date, such bonds, it is a practice to calculate the yield to call (YTC)

$$\mathbf{P} = \sum\limits_{t=1}^n \mathbf{C}/(1+r)^t + \mathbf{F}/(1+r)^n$$

P = price of the bond

n = number of periods C = coupon payment r = required rate of return on this investment F = principal at maturity

t = time period when payment is to be received

Realized yield to maturity

The YTM assumes that the cash flows received through the life of a bond are reinvested at rate equal to the yield to maturity. This assumption may not be valid as reinvestment rates applicable to future cash flows may be different. It is necessary to define the future reinvestment rate which is nothing but realized yield to maturity. The value of r^* is

Present market price $(1+r^*)^n = Future value$

RISKS IN BONDS

- Interest rate risk: it tends to vary over time, causing fluctuations in bond prices. A rise in interest rates will decrease the market price, whereas a fall in interest rates will increase the market price.
- Default risk: it is the risk that a borrower may not pay interest or principal on time. Bonds carry a high default risk which carries low credit rating and they sell at a lower price.
- Marketability risk: The poor liquidity in the debt market, investors face difficulty in trading debt instruments, particularly when the quantity is large. In this case bonds will sell at a discount and purchase at a premium.
- Callability risk: A bond may have a call provision that gives the issuer the option to redeem the bond before its maturity. The issuer would generally exercise the call option when the interest rate decline. This is attractive from the investor's point of view and it exposes to call risk.
- Reinvestment risk: A bond pays periodic interest there is a risk that the interest payments may have to be reinvested at a lower interest rate. This is called reinvestment risk.

BOND VALUE THEOREMS

Theorem 1

- The value of the bonds depends upon three factors, the coupon rate, YTM and the expected yield to maturity
- If the market price of the bond increases, the yield would decline and vice versa.

Example...

	Bond A	Bond B
Par value	Rs.1000	Rs.1000
Coupon rate	10%	10%
Maturity period	2yrs	2yrs
Market price	Rs.874.75	Rs.1035
Yield	18%	8%

Theorem 2

- If the bond's yield remains the same over its life, the discount or premium depends on the maturity period.
- The bond with a short term to maturity sells at a lower discount than the bond with a long term to maturity.

Example....

	bond A	bond B	
Par value	Rs.1000]	Rs.1000
Coupon	10%		10%
Yield	15%	.С	15%
Maturity	2		3
M.Price	918.71	8	385.86
Discount	Rs.81.29	l	Rs.114.14

Theorem 3

If a bond's yield remains constant over its life, the discount or premium amount will decrease at an increasing as its life gets shorter.

Example....

Years to maturity	The present value
5	620.9
4	683.0
3	751.3
2	826.4
1	909.1

Theorem 4

A rise in the bond's price for a decline in the bond's yield is greater than the fall in the bond's price for a raise in the yield.

Example...

Take a bond of 10% coupon rate, maturity period of five years with the face value of Rs 1000. if the yield declines by 2%, that is to 8% then the bond price will be Rs 1079.87

■ If the yield increases by 2% then, the bond price will be Rs.927.88

Theorem 5

The change in the price will be lesser for a percentage change in bond's yield if its coupon rate is higher.

Example...

	bond A	bond B
Coupon	10%	8%
Yield	8%	8%
Maturity	3	3
Price	Rs.105.15	Rs.100
FV	Rs.100	Rs.100
Y.Raise	1%	1%
Price after	Rs.103	Rs.97.47
Yield rises		
% change	2.15%	2.53%

in price

YIELD CURVE (TERM STRUCTURE INTEREST RATE THEORY)

- The level of interest rate and the term structure of interest rate
- The relationship between the yield and time is called term structure.
- It is also known as yield curve.
- Other influences held constant except yield.
- Pure discount bonds are selected.
- The bonds do not have early redemption.

Expectations theory

- Based on the expectations of the investors about the future interest rate.
- There are three reasons to anticipate the fall in the interest rate.
- 1. Fall in the inflation rate
- 2. Balanced budget or cut in the fiscal deficit
- 3. Recession in the economy

Yield curve	Explanation
Ascending	short term rates are expected to rise in future
Descending	short term rates are expected to fall in future
Flat	short term rates are expected to remain unchanged

Liquidity preference theory

- It would be more desirable for the investors to invest in short term bonds than on long term bonds because of their liquidity
- The bond issuing corporate or contributor pay premium to motivate the investors to buy long term bond.
- The exponents of the liquidity preference theory believe that the investors prefer short term rather than long term. Hence they would like to invest in long term bonds

Segmentation theory

- Life insurance companies prefer to invest in a long term bond.
- The commercial banks and corporate may prefer liquidity to meet their short term requirements.
- Supply and demand for fund are segmented in sub markets because of their preferred habitats of the individual.
- The yield is determined by the demand and supply of the funds.
- For example life insurance companies offer insurance policies that do not require any payment for a long time. If the insurance company invests the funds in a long term bond, the interest rate bond would earn interest rate is higher than the promised interest rate, the company stands to gain and its risk is also reduced. On the other hand, commercial banks and corporate may prefer liquidity to meet their short term requirements, they prefer short term issues. Therefore supply and demand for fund are segmented based on the preference of the individuals.

Convexity

- Bond price and yield are inversely related.
- The rise in bond price would cause a fall in yield and vice-versa.
- According to theorem 4 the relationship is not linear.

The quantum increase in the bond's price for a given decline in the yield is higher than the decline in bond's price for a amount of increase in yield.

BOND DURATION

It measures the time structure of a bond and the bond's interest rate risk. It is to measure the average time until all interest coupons and the principal is recovered. This is called Macaulay's duration. It is defined as the weighted average of time periods to maturity.

BOND MANAGEMENT STRATEGIES

- i. Passive strategy
- ii. Quasi passive strategy
- iii. Immunization strategy
- iv. Active strategy

PASSIVE STRATEGY

- It simply involve buying a bond & holding it until maturity
- A manager selects a portfolio of bonds based on the objectives of the client with the intent of holding these bonds to maturity
- Investors don't trade actively to maximize the return
- Hold the bond with a maturity or duration which is close to their investment horizon
- Examine factor such as quality rating, coupon level, terms to maturity, call features etc.
- Only default-free or very high quality securities should be held
- Also, those securities that are callable by firm (allows the issuer to buy back the bond at a particular price and time) or puttable by holder (allows bondholder to sell the bond to issuer at a specified price and time) should not be included
- The buy-and-hold strategy minimizes transaction costs
- Suitable for income maximizing investor with low level of risk

QUASI – PASSIVE STRATEGY

The main techniques of quasi – passive bond management are detailed here.

Ladders

It refers to a portfolio of individual bonds with various maturity dates. The portfolio is divided into equal parts and invested in bonds with staggered maturity over the investor time horizon.

Rungs

By taking the total investment amount that you are planning to invest and dividing it equally by the total number of years for which you wish to have a ladder, you will arrive at the number of bonds for this portfolio, or the number of rungs on your ladder. The greater the number of rungs, the more diversified your portfolio will be and the better protected you will be from any one company defaulting on bond payments.

Height of the ladder - The distance between the rungs is determined by the duration between the maturity of the respective bonds. This can range anywhere from every few months to a few years. Obviously, the longer you make your ladder, the higher the average return should be in your portfolio since bond yields generally increase with time.

Materials - Just like real ladders, bond ladders can be made of different materials. One straightforward approach to reducing exposure to risk is investing in different companies, but investments in products other than bonds are sometimes more advantageous depending on your needs. Debentures, government bonds, municipal bonds, Treasuries and certificates of deposit - each having different strengths and weaknesses - are all different products that you can use to make the ladder. One important thing to remember is that the products in your ladder should not be redeemable (or callable) by the issuer. This would be the equivalent to owning a ladder with collapsible rungs.

Bullets

It refers to the staggered purchase of several bonds that mature at the same time. This is also known as maturity matching strategy. Staggering the purchase date minimizes the interest risk. This approach is effective when the investor wants the proceeds from the bonds at a specific time to meet expenses such as child's higher education fees.

Barbells

A **Barbell strategy** is formed when a Trader invests in Long and Short duration bonds, but does not invest in the intermediate duration bonds. This results in a bond portfolio of medium – term

average weighted maturity. This strategy is useful when interest rates are rising; as the short term maturities are rolled over they receive a higher interest rate, raising the value.

Indexing

The investor buys the bonds that are in the index, to replicate the return and risk of a bond index. It tracks the index and to a certain extent it resembles the buy and hold strategy. Either CRISIL Composite index or iBEX.

IMMUNIZATION STRATEGY

A strategy that matches the durations of assets and liabilities thereby minimizing the impact of interest rates on the net worth. Bonds are typically stable from day to day, but they are exposed to interest rate risk. Without immunization, rising interest rates send bond values down. Bond immunization can reduce the price sensitivity of a bond portfolio to rising interest rates.

You adjust the duration of a portfolio to match your investment horizon. Duration, expressed as a number of years, is a multiple that approximates individual bond or bond portfolio sensitivity to interest rate changes. A bond with a duration of four will see a decline in value that is roughly four times the increase in interest rates. For example, a 0.5 percent increase in interest rates would cause a bond with a duration of four to drop in value about 2 percent, or four times 0.5 percent.

ACTIVE STRATEGIES

The main type of active strategies are valuation strategy and bond swap strategy.

Valuation Strategy

The basic premise of valuation is based on the portfolio manager's ability to identify and purchase undervalued securities and avoid those that appear to be overvalued. For example, take five bonds of the exact same credit rating, maturity, industry and liquidity. Using a required yield to discount the future cash flows, all else being equal, one bond may be pricing out lower than its intrinsic value.

Bond-Swap Strategies

The key to a bond-swap strategy is to simultaneously sell one bond and purchase another for the sole purpose of improving the portfolio's return. This involves simultaneously swapping out of a lower-coupon bond for a higher-coupon bond.

Yield Spread Strategy

Yield spreads are determined by the pricing of bonds in various segments of the market. The unique characteristics of the bonds relate to the varying prices and related yields.

Different coupons across segments can also carry different prices due to their demand and liquidity.

Interest Rate Anticipation

Interest rate anticipation is one of the most common - and probably riskiest - strategies, since it relies on forecasting. Since duration is a more accurate metric to measure volatility, it is used to adjust the portfolio. Duration is lengthened in an effort to capture an increase in value when the prediction is that interest rates will fall. Conversely, if interest rates are expected to rise, the move would be to shorten the duration of the portfolio to preserve capital and potentially reinvest in shorter-term bonds when rates are presumed to be higher.

BOND IMMUNIZATION

- It is a technique that makes the bond portfolio holder to be relatively certain about the promised stream of cash flows.
- The bond interest rate risk arises from the changes in the market interest rate.
- The market rate affects the coupon rate and the price of the bond.
- The coupon rate risk and the prices risk can be made offset each other.
- Whenever there is an increase in the market interest rate, the prices of the bonds fall.
- At the same time newly issued bonds offer higher interest rate.
- The coupon can be reinvested in the bonds offering higher interest rate and losses that occur due to the fall in the price of bond can be offset and the portfolio is said to be immunized.

PREFERENCE SHARES

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

There are four types of preference shares: Cumulative preferred, for which dividends must be paid including skipped dividends; non-cumulative preferred, for which skipped dividends are not included; participating preferred, which give the holder dividends plus extra earnings based on certain conditions; and convertible, which can be exchanged for a specified number of shares of common stock.

Features of Preference Shares

Return on Investment: It is in the form of dividend and rate of dividend is prefixed and pre communicated to the investors.

Not Owners: Investors in preference shares are not the owners of the company.

Return of Capital: Capital raised by the company by way of preference shares are required to be repaid during the existence of the company.

Non participation in management: Preference shareholders do not participate in the affairs of the company.

Risk: The risk is more on the part of the company.

EQUITY SHARES

Meaning: Equity shares are those shares which are ordinary in the course of company's business. They are also called as ordinary shares. These shareholders do not enjoy preference regarding payment of dividend and repayment of capital. Equity shareholders are paid dividend out of the profits made by a company. Higher the profits, higher will be the dividend and lower the profits, lower will be the dividend.

Features of Equity Shares

(1) **Owned capital:** Equity share capital is owned capital because it is the money of the shareholders who are actually the owners of the company.

(2) Fixed value or nominal value: Every share has fixed value or a nominal value. For example, the price of a share is Rs. 10/- which indicates a fixed value or a nominal value.

(3) **Distinctive number:** Every share is given a distinct number just like a roll number for the purpose of identification.

(4) Attached rights: A share gives its owner the right to receive dividend, the right to vote, the right to attend meetings, the right to inspect the books of accounts.

(5) **Return on shares:** Every shareholder is entitled to a return on shares which is known as dividend. Dividend depends on the profits made by a company. Higher the profits, higher will be the dividend and vice versa.

(6) **Transfer of shares:** Equity shares are easily transferable, that is if a person buys shares of a particular company and he does not want them, he can sell them to any one, thereby transferring the shares in the name of that person.

(7) Benefit of right issue: When a company makes fresh issue of shares, the equity shareholders

are given certain rights in the company. The company has to offer the new shares first to the equity shareholders in the proportion to their existing shareholding. In case they do not take up the shares offered to them, the same can be issue to others. Thus, equity shareholders get the benefits of the right issue.

(8) Benefit of Bonus shares: Joint stock companies which make huge profits, issue bonus shares to their ordinary shareholders out of the accumulated profits. These shares are issued free of cost in proportion to the number of existing equity share holding. In case they do not take up the shares offered to them, the same can be issued to others. Thus, equity shareholders get the benefits of the right issue.

(9) **Irredeemable:** Equity shares are always irredeemable. This means equity capital is not returnable during the life time of a company.

(10) Capital appreciation: The nominal or par value of equity shares is fixed but the market value fluctuates. The market value mainly depends upon profitability and prosperity of the company. High rate of dividend is paid with high rate of profit, the shareholders capital is appreciated through an appreciation in the market value of shares. (i.e. higher the rate of dividend, higher the market value of the shares.)

MODULE 4: FUNDAMENTAL & TECHNICAL ANALYSIS

Macro-Economic and Industry Analysis: Fundamental analysis-EIC Frame Work, Economy Analysis, Industry Analysis, Company Analysis- Financial Statement Analysis.

Market Efficiency: Efficient Market Hypothesis, Forms of Market Efficiency, Empirical test for different forms of market efficiency.

Technical Analysis – Concept, Theories- Dow Theory, Eliot Wave theory. Charts-Types, Trends and Trend Reversal Patterns.

Mathematical Indicators – Moving Average Convergence-Divergence, Relative Strength Index (Theory only).

FUNDAMENTAL ANALYSIS

The intrinsic value of an equity share depends on a multitude of factors. The earnings of the company, the growth rate & the risk exposure of the company have a direct impact on the price of the share. These factors in turn rely on the host of other factors like the economic environment in which they function, the industry they belong to & finally companies' performance. The fundamental school of thought appraised the intrinsic value of shares through:

- Economic Analysis
- Industry Analysis
- Company Analysis

ECONOMIC ANALYSIS

The level of economic activity has an impact on investment in many ways. If the economy grows rapidly, the industry can also be expected to show rapid growth & vice versa. When the level of economic activity is low, stock prices are low & when the economic activity is high, stock prices are high reflecting the prosperous outlook for sales & profits of the firms.

Global economy

In a globalized business environment, the top-down analysis of the prospects of a firm must begin with the global economy. The global economy has a bearing on the export prospects of the firm, the competition it faces from international competitors, and the profitability of its overseas investment.

Global economic scene

2000 – 2010 – Rise of Developing and Emerging Economies

2000 – 2006 – The United States still leads, but China is catching up

At exchange rates, the economic output of 176 markets expanded by \$17.4 trillion from 2000 to 2006. The five largest contributors to global output expansion are the United States at 20%, China at 9%, Germany at 6%, the United Kingdom at 6%, and France at 5%. The economic output of the 5 markets contracted by \$94.2 billion from 2000 to 2006. The three largest contributors to global output contraction are Japan at 80%, Argentina at 19%, and Uruguay at 1%.

At purchasing power parity, the economic output of 180 markets expanded by \$19.2 trillion from 2000 to 2006. The five largest contributors to global output expansion are the United States at 18%, China at 17%, India at 6%, Japan at 5%, and Russia at 4%.

2007 – China leads the expansion

The economic output by nominal GDP of 183 markets expanded by \$6.4 trillion during 2007. China accounted for 12% while the United States accounted for 10%, Germany accounted for 6%, and the United Kingdom accounted for 6% of the global output expansion.

2008 – Credit crisis begins

The economic output of 171 markets expanded by \$5.8 trillion during 2008. China accounted for one-sixth of the global output expansion. The economic output of 11 markets contracted by \$267 billion during 2008. The United Kingdom accounted for one-half while South Korea accounted for two-fifth of the global output contraction. Though the crisis first affected most countries in 2008, it was not yet deep enough to reverse growth.

2009 – Credit crisis spreads

At exchange rates, the economic output of 127 markets contracted by \$4.1 trillion during 2009. The United Kingdom was the largest victim accounting for 12% while Russia accounted for 11% and Germany accounted for 8% of the global output contraction. The economic output of 56 markets expanded by \$767.1 billion during 2009. China accounted for 61% while Japan accounted for 20% and Indonesia accounted for 4% of the global output expansion.

At purchasing power parity, the economic output of 79 markets contracted by \$1.4 trillion during 2009. The United States was the largest victim accounting for 18% while Japan accounted for 17% and Russia accounted for 10% of the global output contraction. The economic output of 104 markets expanded by \$1.5 trillion during 2009. China accounted for 56% while India accounted for 17% and Indonesia accounted for 3% of the global output expansion.

2010 - Recovery

At exchange rates, the economic output of 148 markets expanded by \$5.3 trillion during 2010. The five largest contributors to global output expansion are China at 17%, the United States at 10%, Brazil at 9%, Japan at 8%, and India at 5%. The economic output of 35 markets contracted by \$338.5 billion during 2010. The five largest contributors to global output contraction are France at 22%, Italy at 18%, Spain at 17%, Venezuela at 10%, and Germany at 7%.

At purchasing power parity, the economic output of 169 markets expanded by \$4.2 trillion during 2010. The five largest contributors to global output expansion are China at 25%, the United States at 13%, India at 10%, Japan at 5%, and Brazil at 4%. The economic output of 14 markets contracted by \$17.8 billion during 2010. The five largest contributors to global output contraction are Greece at 67%, Venezuela at 19%, Romania at 5%, Haiti at 3%, and Croatia at 2%.

IMF's economic outlook for 2010 noted that banks faced a "wall" of maturing debt, which presents important risks for the normalization of credit conditions. There has been little progress in lengthening the maturity of their funding and, as a result, over \$4 trillion in debt is due to be refinanced in the next 2 years.

While there have been some encouraging signs of economic recovery, especially in the United States, the global economic growth seems to be losing momentum. According to the IMF's World Economic Outlook report published in April 2012, "global growth is projected to drop from about 4 percent in 2011 to about 3½ percent in 2012 because of weak activity during the second half of 2011 and the first half of 2012."

The commonly analyzed macro-economic factors are:-

- Gross domestic product
- Savings & investment
- Inflation
- Interest rates
- Budget

- Tax structure
- Balance of payment
- Monsoon & agriculture
- Infrastructure facilities
- Demographic factors
- Economic forecasting
- Economic indicators
- Diffusion index
- Econometric model building

MACRO-ECONOMIC FACTORS

Gross domestic product (GDP)

GDP indicates the rate of growth of the economy. GDP represents the aggregate value of the goods & services produced in the economy. GDP consist of personal consumption expenditure, gross private domestic investment & government expenditure on goods & services & net export of goods & services. The GDP estimates are available on an annual basis. The rate of growth of GDP is 6.5% in 2009.

Savings & investment

It is obvious that growth requires investment which in turn requires substantial amount of domestic savings. Stock market is a channel through which the savings of the investors are made available to corporate bodies. Savings are distributed over various assets like equity shares, deposits, mutual fund units, real estate & bullion. The savings & investment patterns of the public affect the stock to a great extent.

Inflation

Along with the growth of GDP, if the inflation rate also increases, then the real rate of growth would be very little. The demand in the consumer product industry is significantly affected. The industries which come under the government price control policy may lose the market, for example sugar. The government control over this industry, affects the price of sugar & thereby the profitability of the industry itself.

Interest rates

The interest rates affect the cost of financing the firms. A decrease in the interest rate implies lower cost of finance for firms & more profitability. More money is available at a lower

interest rate for the brokers who are doing business with borrowed money. Availability of cheap fund encourages speculation & rise in the price of shares.

Budget

The budget draft provides an elaborate account of the government revenues & expenditures. A deficit budget may lead to high rate of inflation & adversely affect the cost of production. Surplus budget may result in deflation. Hence, balanced budget is highly favorable to the stock market.

The tax structure

Every year in March, the business community eagerly awaits the government's announcement regarding the tax policy. Concessions & incentives given to a certain industry encourage investment in that particular industry. Tax relieves are given to encourage savings. The type of tax exemption has impact on the profitability of the industries.

The balance of payment

The balance of payment is a record of a countries money receipts from & payments abroad. The difference between receipts & payments may be surplus or deficit. Balance of payment is a measure of the strength of rupee on external accounts. If the deficit increases, the rupee may depreciate against other currencies, thereby, affecting the cost of imports. A favorable balance of payment renders a positive effect on the stock market.

Monsoon & agriculture

Agriculture is directly & indirectly linked with industries. For example, sugar, cotton, textile and food processing industries depend upon agriculture for raw material. Fertilizer & insecticide industries are supplying inputs to the agriculture. A good monsoon leads to a higher demand for input and results in the bumper crop.

Infrastructure facilities

Infrastructure facilities are essentials for growth of the industrial and agriculture sector. A wide network of communication system is a must for the growth of the economy. Regular supply of power without any power cut would boost the production. Banking and financial sectors also should be sound enough to provide adequate support to the industry and agriculture. Good infrastructure facilities affect the stock favorably. In India even though infrastructure facilities

have been developed, still they are not adequate. The government has liberalized its policy regarding the communication, transport and the power sector.

Demographic factors

The demographic factors provide details about the popularity by age, occupation, literacy and geographic location. This is needed to forecast the demand for the consumer goods. The population by age indicates the availability of able work force.

THE BUSINESS CYCLE

Chart 1: Business Cycle Diagram



Recession

The recession stage is described as the bottom stage of the cycle. It is characterized as the stage ahead of recovery. In this stage, the Fed will expand the money supply in order to stimulate growth. Attractive investment opportunities in this stage include investments such as commodities and stocks.

Recovery

The recovery stage is characterized as the stage after recovery. The economy is starting to "recover" after the recession; the Federal Government's moves to stimulate the economy begin to have an effect. In this stage, attractive investment opportunities include investments such as cyclical investments and commodities.

Expansion

The early expansion stage is a continuation of the recovery stage, where the recovery begins to gain momentum. In this stage, attractive investment opportunities include investments in the overall stock market and real estate.

The late expansion stage continues on after the early expansion stage. In this stage the expansion momentum continues and investor confidence is strong. Attractive investment opportunities in the late expansion stage include investments in bonds and interest sensitive investments. **Slowing**

into Recession

This stage occurs after the expansion phase and is the stage where the economy begins to show signs of slowing down and even turning negative. In this stage, attractive investment opportunities include investments in bonds and interest sensitive investments.

INDUSTRY ANALYSIS

An industry is a group of firms that have similar technological structure of production & produce similar products. For the convenience of the investors, the broad classification of the industry is given in financial dailies & magazines. Companies are distinctly classified to give a clear picture about their manufacturing process & products. These industries can be classified on the basis of the business cycle. They are:

- Growth industry
- Cyclical industry
- Defensive industry
- Cyclical growth industry
- a) *Growth industry*: the growth industries have special features of high rate of earnings and growth in expansion, independent of the business cycle. The expansion of the industry mainly depends on the technological changes. For instance, in spite of the recession in the Indian economy in 1997-98, there was a spurt in growth of information technology industry. It defied the business cycle and continued to grow.
- b) *Cyclical industry*: the growth and the profitability of the industry move along with the business cycle. During the boom period they enjoy growth and during depression they suffer a setback. For example, the white goods like fridge, washing machine and kitchen range products command a good market in the boom period and the demand for them slackens during the recession.

- c) *Defensive industry*: defensive industry defines the movement of the business cycle. For example shelter is the basic requirements of humanity. The food industry withstands recession and depression. The stocks of the defensive industries can be held by the investor for income earning purpose. They expand and earn income in the depression period too, under the government's umbrella of protection and are counter-cyclical in nature.
- d) *Cyclical growth industry*: this is a new type of industry that is cyclical and at the same time growing. For example, the automobile industry experiences periods of stagnation, decline but they grow tremendously. The changes in technology and introduction of new models help the automobile industry to remain their growth path.

Industry life cycle

The industry life cycle theory is separated into 4stages such as:

- Pioneering stage
- Rapid growth stage
- Maturity & stabilization stage
- Declining stage

Pioneering stage:-

The prospective demand for the product is promising in this stage and the technology of the product is low. The demand for the product attracts many producers to produce the particular product. There would be severe competition and only fittest companies survive this stage. The producers try to develop brand name, differentiate the product and create a product image. The severe competition often leads to the change of position of the firms in terms of market shares and profit. In this situation, it is difficult to select companies for investment because the survival rate is unknown.

Rapid growth stage

This stage starts with the appearance of surviving firms from the pioneering stage. The companies that have withstood the competition grow strongly in market share & financial performance. The technology of the production would have improved resulting in low cost of production & good quality products. The companies have stable growth rate in this stage & they declare dividend to the shareholders. It is advisable to invest in the shares of these companies. In this stage the growth rate is more than the industry's average growth rate.
Maturity and stabilization stage

In the stabilization stage, the growth rate tends to moderate and the rate of growth would be more or less equal to the industrial growth rate or the gross domestic product growth rate. Symptoms of obsolescence may appear in the technology. To keep going, technological innovations in the production process & products should be introduced. The investors have to closely monitor the events that take place in the maturity stage of the industry.

Declining stage

In this stage, demand for the particular product & the earnings of the companies in the industry decline. Innovation of new products & changes in consumer preferences lead to this stage. The specific feature of the declining stage is that even in the boom period; the growth of the industry would be low & decline at a higher rate during the recession. It is better to avoid investing in the shares of the low growth industry even in the boom period. Investment in the shares of these types of companies leads to erosion of capital.

Factors to be considered

Apart from industry life cycle analysis, the investor has to consider some other factors also. They are

- i. Growth of the industry
- ii. Cost structure and profitability
- iii. Nature of the product
- iv. Nature of the competition
- v. Government policy
- vi. Labor
- vii. R&D

Company Analysis

In the company analysis the investor assimilates the several bits of information related to the company & evaluates the present & future values of the stock. The risk & return associated with the purchase of the stock is analyzed to take better investment decisions. The valuation process depends upon the investor's ability to elicit information from the relationship & interrelationship among the company related variables. The present & future values are affected by a number of factors & they are given below-



- Competitive edge of the company: major industries in India are composed of hundreds of individual companies. In the information technology industry even though the number of companies is large, few companies like Tata InfoTech, Infosys, NIIT etc., control the major market share. Once the companies obtain the leadership position in the market, they seldom to lose it. Over the time they would have proved their ability to withstand competition and to have a sizeable share in the market. The competitiveness of the company can be studied with the help of
- \rightarrow The market share
- \rightarrow The growth of annual sales
- \rightarrow The stability of annual sales
- *Earnings of the company*: sales alone do not increase the earnings but the costs and expenses
 of the company also influence the earnings of the company. Even though there is a relationship
 between sales and earnings, it is not a perfect one. Sometimes, the volume of sales mat decline
 but the earnings may improve due to the rise in the unit price of the article. Hence, the investor
 should not depend only on the sales, but should analyze the earnings of the company.
- *Capital structure*: the equity holder's return can be increased manifold with the help of financial leverage, i.e., using debt financing along with equity financing. The effect of financial leverage is measured by computing leverage ratios.

- *Management*: good and capable management generates profit to the investors. The management of the firm should efficiently plan, organize, actuate and control the activities of the company. The basic objective of management is to attain the stated objectives of company for the good of the equity holders, the public and the employees.
- *Operating efficiency*: the operating efficiency of a company directly affects the earnings of a company. An expanding company that maintains high operating efficiency with a low breakeven point earns more than the company with high break-even point. Efficient use of fixed assets with raw materials, labor and management would lead to more income from sales. This leads to internal fund generation for the expansion of the firm. A growing company should have low operating ratio to meet the growing demand for its product.
- *Financial performance*: the best source to analyze the company's financial performance is its own financial statements. Financial statement analysis is the study of a company's financial statement from various viewpoints. The statement gives the historical and current information about the company's operations; historical financial statement helps to predict the future. The current information aids to analyze the present status of the company. The two main statements used in the analysis are:
 - \rightarrow Balance sheet

It shows all the company's sources of funds (liabilities and stockholder's equity) and uses of funds at a given point of time. The balance sheet can be either in the horizontal form or vertical form

 \rightarrow *Profit and loss account.*

The income statement reports the flow of funds from business operations that take place in between two points of time. It lists down the items of income and expenditure.

ANALYSIS OF FINANCIAL STATEMENTS

Comparative financial statements: The annual data are compared with similar data of previous years, either in absolute terms or in percentages.

Trend analysis: Here percentages are calculated with a base year. This would provide insight into the growth or decline of the sale or profit over the years.

Common size statement: Common size statements can be made between two different size firms belonging to the same industry.

Fund flow analysis: It is a statement of the sources and application of funds. It highlights the changes in the financial condition of a business enterprise between two balance sheet dates.

Cash flow statement: The investor interested in knowing the cash inflow and outflow of the enterprise. It is prepared with the help of balance sheet, income statement and some additional information.

Ratio analysis

Ratio is a relationship between two figures expressed mathematically. Financial ratios are calculated from the balance sheet and profit and loss account.

- Liquidity ratio
- Turnover ratio
- Leverage ratio
- Profit margin ratio
- Return on investment ratio
- Valuation ratio

TECHNICAL ANALYSIS

It is a process of identifying trend reversals at an earlier stage to formulate the buying and selling strategy. With the help of several indicators they analyze the relationship between price- volume and supply-demand for the overall market and the individual stock. Volume is favorable on the upswing i.e., the number of shares traded is greater than before and on the downside the number of shares traded dwindles. If it is the other way round, trend reversals can be expected.

The assumptions of technical analysis are as follows:-

- a) The market value of the script is determined by the interaction of supply and demand.
- b) The market discounts everything. The price of the security quoted represents the hopes, fears and inside information received by the market players. Insider information regarding the issuing of bonus shares and right issues may support the prices. These factors may cause a shift in demand and supply, changing the direction of trends.
- c) The market always moves in trend. Except for minor deviations, the stock prices move in trends. The price may create definite patterns too. The trend may be either increasing or decreasing. The trend continues for some time & then it reverses.
- d) In the rising market investors psychology has up beats and they purchase the shares in greater volumes, driving the prices higher. At the same time, in the down trend they may be very eager

to get out of the market by selling them & thus plunging the share price further. The market technicians assume that past prices predict the future.

Contrary-Opinion Rules

- Many analysts rely on rules developed from the premise that the majority of investors are wrong as the market approaches peaks and troughs
- Technicians try to determine whether investors are strongly bullish or bearish and then trade in the opposite direction
- These positions have various indicators

DOW THEORY

Dow developed his theory to explain the movement of the indices of Dow Jones Averages. He developed he theory on the basis of certain hypothesis. The first hypothesis is that, no individual buyer can influence the major trend of the market. However; an individual investor can affect the daily price movement by buying or selling huge quantum of particular scrip. The intermediate price movement also can be affected to a lesser degree by an investor.

His second hypothesis is that the market discounted in the market. The pokhran blast affected the share market for a short while and the market returned back to normalcy

His third hypothesis is that theory is not infallible. It is not a tool to beat the market but provides a way to understand it better.

According to Dow Theory the trend is divided into primary, Intermediate and short term trend. The primary trend may be the broad upward or downward movement that may last for a year or two. The intermediate trends are corrective movements, which may last for three weeks to three weeks to three months. The primary trend may be interrupted by the intermediate trend. The short term refers to the day to day price movement. It is also known as oscillations or fluctuations. These three types of trends are compared to tide, waves and ripples of the sea.

Trend is the direction of movement. The share price can either increase or fall or remain flat. The three direction of the share price movements are called as rising, falling and flat trend. The point to be remembered is that share prices do not fall or rise in a straight line every rise or fall in price experiences a counter move.

If a share price is increasing, the counter moves. If a share price is increasing, the counter move will be a fall in price and vice-versa. The share price move in zigzag manner.

The trend lines are straight line drawn connecting either the tops or bottoms of the share price movement to draw a trend line, the technical analyst should have at least or bottoms. The following figures shows the trend lines

Dow Theory Trends



The rise or fall in share price cannot go on forever. The share price cannot go on forever. The share price movement may reverse its direction. Before the change of direction, certain patter in price movement emerges. The change in the direction of the trend is shown by violation of the trend line from above; it is a violation of trend line and signals the possibility of fall in price. Like-wise if the scrip pierces the trend line from below, this signals the rise in price.

Support and resistance level

A *support level* exists at a price where considerable demand for that stock is expected to prevent further fall in the price level.

In the *resistance level*, the supply of scrip would be greater than the demand and further rise in price is prevented.

For ex: if a scrip price hovers around Rs 150 for some weeks, then it may rise and reach Rs 210. At this point the price halts and then falls back. The scrip keeps on falling back to around its original price Rs 150 and halts. Then it moves upward. In this case Rs 150 becomes the support level. At this point, the scrip is cheap and investors buy it and demand makes the price move upward. Whereas Rs 210 become the resistance level, the price is high and there would be selling pressures resulting in the decline of the price.

The support level and resistance level differs in the following way:

Support level Resistance level	
• When the stock touches a certain level and	• If the stock reaches down to a certain
then drops, this is called resistance.	level and then rises there exists a
• The fall in the price may be halted for the	support.
time being or it may result even in price	• The selling price is greater and the
reversal. In the support level, demand for	increase in price is halted for the time
the particular scrip is expected.	being.
• If the scrip price reverses the support level	• If the scrip penetrates the previous top
and moves downward, it means that the	and moves above, it is the violation of
selling pressure has overcome the	resistance level. At this point, buying
potential buying pressure, signalling the	pressure would be more than the selling
possibility of a further fall in the value of	pressure. If the scrip was to move above
the scrip. It indicates the violation of the	the double top or triple top formation, it
support level and bearish market.	indicates bullish market.

The support and resistance level need not be formed only on tops or bottoms. They can be on the trend lines or gaps of the chart. Gaps are defined as those points or price levels where the scrip has not changed hands. In the rising or falling price level gaps are formed. If the prices are in the upward move and the high of any day is lower than the next day's low, the gap is said to have occurred.

INDICATORS

Volume of trade

Volume expands with the bull market and narrows down in the bear market. Large rise in price or large fall in price leads to large increase in volume.

The breath of the market

It is a method often used to study the advances and declines that have occurred in the stock market. Advances mean the number of shares whose prices have increased from the previous day's trading. Declines indicate the number of shares whose prices have fallen from the previous day trading.

Short sales

Short sale refers to the selling of shares that are not owned. The bears are the short sellers who sell now in the hope of purchasing at a lower price in the future to make profits.

Odd lot trading

Shares, sold in smaller lots, fewer than 100 are called odd lot. Such buyers and sellers are called odd lotters. Odd lot purchases to odd lot sales are the odd lot to index. The increase in the odd lot purchases results in an increase in the index. Relatively more selling leads to fall in the index.

Moving average

The market indices do not rise or fall in straight line. The word moving means that the body of data moves ahead to include the recent observation. It is the five day moving average, on the sixth day the body of data moves to include the sixth day observation eliminating the first day's observation. In moving average closing price of the stock is used.

Oscillators

Oscillators indicate the market momentum or scrip momentum. It shows the share price movement across a reference point from one extreme to another. The momentum indicates:

- Over bought and oversold conditions of the scrip or the market.
- Signalling the possible trend reversal
- Rise or decline in the momentum.

Relative Strength Index (RSI)

Relative Strength Index (RSI) was developed by wells wilder. It is an oscillator used to identify the inherent technical strength and weakness of a particular scrip or market. RSI can be calculated for scrip by adopting the following formula.

RS = 100 - [100/1 + Rs]

Rs = average gain per day / average loss per day

The RSI can be calculated foe any number of days depending on the wish of the technical analyst and the time frame of trading adopted in a particular stock market. RSI is calculated for 5, 7, 9 and 14 days. If the time period taken for calculation is more, the possibility of getting wrong signals is reduced. Reactionary or sustained rise or fall in the price of the scrip is foretold by the RSI.

The broad rule is, if the RSI crosses seventy three mat be downturn and it is time to sell. If the RSI falls thirty it is time to pick up the scrip.

Rate of change

ROC measures the rate of change between current price and the price 'n' number of days in the past. ROC helps to find out the overbought and oversold positions in scrip. It is also useful in identifying the trend reversal. Closing prices are used to calculate the ROC. Calculation of ROC for 12 week or 12 month is so popular. Suppose the price of AB company's share is Rs.12 and price twelve days ago was Rs.10 then the ROC is obtained by using: 12/10*100 = 120%. In the second method, the % variation between the current price and the price twelve days in the past is calculated. It is nothing but 12/10*100-100=20%.

CHARTING PATTERNS

Charts are the valuable and easier tools in the technical analysis. The graphic presentation of the data helps in the investors to find out trend of the price without any difficulty. The charts also have the following uses-

-Sports the current trend for the buying and selling.

- Indicates the probable future action of the market by projection.
- Shows the past historic movements.
- Indicates the important areas of the support and resistance.

<u>1. Point & Figure charts</u>

Technical analyst to predict the extent & direction of the price movement of a particular stock or the stock market indices uses point & figure charts. This PF charts are of one-dimensional & there is no indication of time or volume. The price changes in relation to previous prices are shown. The change of direction can be interpreted. The charts are drawn in the ruled paper.



2. Bar charts

The bar chart is the simplest & most commonly used tool of a technical analyst. To build a bar a dot is entered to represent the highest price at which the stock is traded on that day, week or month. Then another dot is entered to indicate the lowest price on that particular date. A line is drawn to connect both the points a horizontal nub is drawn to mark the closing price. Line charts are used to indicate the price movements. The line chart is a simplification of the bar chart. Here a line is drawn to connect the successive closing prices.



3. Double top & bottom

This type of formation signals the end of one trend & the beginning of another. If the double top is formed when a stock price rises to a certain level, falls rapidly, again rises to the same height or more & turns down. The double top may indicate the onset of the bear market.

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



4. Head & shoulders

This pattern is easy to identify & the signal generated by this pattern is considered to be reliable. In the head & shoulder pattern there are three rallies resembling the left shoulder, a head 7 a right shoulder. A neckline is drawn connecting the lows of the tops. When the stock price cuts the neckline from above, it signals the bear market.



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

Triangles

The triangle formation is easy to identify & popular in technical analysis. The triangles are of ascending and descending triangle.

- a) Ascending triangle
- b) Descending triangle
- c) symmetrical



6. Flags

Flag pattern is commonly seen on the price charts. These patterns emerge either before a fall or rise in the value of the scrip's. These patterns show the market corrections of the overbought or oversold situations.

7. Pennant

Pennant looks like a symmetrical triangle. Here also there are bullish & bearish pennants. In the 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. Likewise in the bearish pennant, upward trend line is falling and the lower trend line is rising.

8. Japanese candlesticks



- Been around for hundreds of years
- Often referred to as "Japanese Candles" because the Japanese would use them to analyze the price of rice contracts
- Similar to bar chart, but uses color to show if stock was up (green) or down (red) over the day
- More than 20 patterns are used by technicians for candlestick charting. Some of the most popular include the following.
- Green is an example of a bullish pattern, the stock opened at (or near) its low and closed near its high



• Red is an example of a bearish pattern. The stock opened at (or near) its high and dropped substantially to close near its low



- Top example is called a hammer and is a bullish pattern only if it occurs after the stock price has dropped for several days.
 - Theory is that pattern indicates a reversal



• Bottom is an example of a star, typically indicating a reversal and/or indecision.



Elliott Wave Theory

Ralph Nelson Elliott developed the Elliott Wave Theory in the late 1920s by discovering that stock markets, thought to behave in a somewhat chaotic manner, in fact traded in repetitive cycles. Elliott discovered that these market cycles resulted from investors' reactions to outside influences, or predominant psychology of the masses at the time. He found that the upward and downward swings of the mass psychology always showed up in the same repetitive patterns, which were then divided further into patterns he termed "waves".

Elliott's theory is somewhat based on the Dow Theory in that stock prices move in waves. Because of the "fractal" nature of markets, however, Elliott was able to break down and analyze them in much greater detail. Fractals are mathematical structures, which on an ever-smaller scale infinitely repeat themselves. Elliott discovered stock-trading patterns were structured in the same way.

Market Predictions Based on Wave Patterns

Elliott made detailed stock market predictions based on unique characteristics he discovered in the wave patterns. An impulsive wave, which goes with the main trend, always shows five waves in its pattern. On a smaller scale, within each of the impulsive waves, five waves can again be found. In this smaller pattern, the same pattern repeats itself ad infinitum. These ever-smaller patterns are labeled as different wave degrees in the Elliott Wave Principle. Only much later were fractals recognized by scientists.

In the financial markets we know that "every action creates an equal and opposite reaction" as a price movement up or down must be followed by a contrary movement. Price action is divided into trends and corrections or sideways movements. Trends show the main direction of prices while corrections move against the trend. Elliott labeled these "impulsive" and "corrective" waves.

Theory Interpretation

The Elliott Wave Theory is interpreted as follows:

- Every action is followed by a reaction.
- Five waves move in the direction of the main trend followed by three corrective waves (a 5-3 move).
- A 5-3 move completes a cycle.
- This 5-3 move then becomes two subdivisions of the next higher 5-3 wave.
- The underlying 5-3 pattern remains constant, though the time span of each may vary.

Let's have a look at the following chart made up of eight waves (five up and three down) labeled 1, 2, 3, 4, 5, A, B and C.



You can see that the three waves in the direction of the trend are impulses, so these waves also have five waves within them. The waves against the trend are corrections and are composed of three waves.



The major difference between technical and fundamental analysis is:

	Fundamental analysis		Technical analysis
1.	Fundamental analyst's analyses the stock	1.	The technical analysts mainly focus the
	based on the specific goals of the		attention on the past history of prices.
	investors. They study the financial		Generally technical analysts choose to
	strength of corporate, growth of sales,		study two basic market data-price and
	earnings and profitability. They also take		volume.
	account the general industry and	2.	Compared to fundamental analysts,
	economic conditions.		technical analysts mainly predict the short
2.	The fundamental analysts estimate the		term price movement rather than long term
	intrinsic value of the shares and purchase		movement. They are not committed to buy
	them when they are undervalued. They		and hold policy.
	dispose the shares when they are cover	3.	Technicians opine that they can forecasts
	priced and earn profits. They try to find		supply and demand by studying the prices
	out the long term value of shares.		and volume of trading.
3.	Fundamentals are of the opinion that		
	supply and demand for stocks depend on		
	the underlying factors. The forecasts of		
	supply and demand depend on various		
	factors.		

In both the approaches supply and demand factors are considered to be critical. Business, economic, social and political concern affects the supply and demand for securities. These underlying factors in the form of supply and demand come together in the securities market to determine security prices.

EFFICIENT MARKET THEORY

BASIC CONCEPTS

Before understanding the theory certain concepts and phrases like market efficiency, liquidity traders and information traders should be understood.

Market efficiency The expectations of the investors regarding the future cash flows are translated or reflected on the share prices. The accuracy and the quickness in which the market translates the expectation into prices are termed as market efficiency. There are two types of market efficiencies: -Operational efficiency

-Informational efficiency

Operational efficiency At stock exchange operational efficiency is measured by factors like time taken to execute the order and the number of bad deliveries. Investors are concerned with the operational efficiency of the market. But efficient market hypothesis does not deal with this efficiency.

Informational efficiency It is a measure of the swiftness or the market's reaction to new information. New information in the form of economic reports, company analysis, political statements and announcement of new industrial policy is received by the market frequently. How does the market react to this? Security prices adjust themselves very rapidly and accurately. They never take a long time to adjust to the new information. For instance the announcement of bonus shares of any company would result in a hike in price of that stock. Like-wise major changes in the policy decisions of the Government are also reflected in the stock index movement.

Liquidity traders These traders investments and resale of shares depend upon their individual fortune. Liquidity traders may sell their shares to pay their bills. They do not investigate before they invest.

Information traders Information traders analyze before adopting any buy or sell strategy. They estimate the intrinsic value of shares. The deviation between the intrinsic value and the market value makes them enter the market. They sell if the market value is higher than the intrinsic value and vice -versa. The buying and selling of the shares through the demand and supply forces bring the market price back to its intrinsic value.

THE RANDOM-WALK THEORY

In 1900, a French mathematician named Louis Bachelier wrote a paper suggesting that security price fluctuations were random. In 1953, Maurice Kendall in his paper reported that stock price series is a wandering. They appeared to be random; each successive change is independent of the previous one. In 1970, Fama said that efficient markets fully reflect the available information. If markets are efficient, securities' prices, reflect normal returns for their level of risk. Fama suggested that efficient market hypothesis can be divided into three categories. They are "weak form", the "semi-strong form" and the "strong form". The level of information being considered in the market is the basis for this segregation.



WEAK FORM OF EMH

The type of information used in the weak form of EMH is the historical prices. According to it, current prices reflect all information found in the past prices and traded volumes. Future prices cannot be predicted by analyzing the prices from the past. Everyone has the access to the past prices, even though some people can get these more conveniently than others. Liquidity traders may sell their stocks without considering the intrinsic value of the shares and cause price fluctuations. Buying and selling activities of the information trader's lead the market price to align with the intrinsic value.

In the weak efficient market short term traders may earn a positive return. On an average, short term traders will not outperform the blind folded investor picking the stock with a dart. That is traders may earn by the naive buy and hold strategy while some may incur loss, the average buy and hold strategy cannot be beaten by the chartist. Many studies of the market analysts have proved the weak form of the EMH. Empirical tests of the weak form are presented here.

Filter rule To earn returns technical trading strategies based on historical prices have been used. Filter rule is one among such strategies. According to this strategy if a price of a security rises by

at least x per cent, investor should buy and hold the stock until its price declines by at least x per Dr. Deepak Kumar D, Assoc. Professor, Mr. Chandan L, Asst. Professor, Mr. Harsha R Assistant Professor RNSIT

cent from a subsequent high. Short sellers can use the filter to earn profits by liquidating their holdings when the price decreases from a peak level by x per cent. They can take up short position as the price declines till the price reaches a new low and then increases by 'x' percentage. Different filter rules are used by different traders. It ranges from as small as.5 per cent to as large as 50 per cent.

The filter rule can be explained with the help of an example. Take a hypothetical company XY and assume me filter to be 10 per cent. The price fluctuates between Rs 20 to 30. Assume the starting point to be Rs 20. When there is an increase in the price of the share to Rs 22 Le., (10 per cent rise) one has to buy it. The rally may continue up to Rs 30 and decline. If the price falls the sell signal is given at Rs 27 i.e. 10% of Rs 30 and me trader can take up the short position till it reaches its low level. When there is a rise in price the same exercises have to be followed.

Runs Test

Runs test is used to find out whether the series of price movements have occurred by chance. A run is an uninterrupted sequence of the same observation. If a coin is tossed the following sequence may occur

ННТТТНННТНН

Here occurrence of H H is a run and T T is another run. When the sequences of the observations change we count it as a run.

Serial correlation

To test the independence between successive price changes serial correlation technique is used. Serial correlation or auto-correlation measures the correlation co-efficient in a series of numbers with the lagging values of the same series. Price changes in period t + 1 (or t + any number) are correlated with the price changes of the preceding period. Scatter diagrams can be used to find out the correlation. If there is correlation between the price of t and t + 1 period, the points plotted in the graph would form a straight line. If the price rise (or fall) in period t is followed by price rise (or fall) in period t + 1 then the correlation co-efficient would be +1. But many studies conducted on the security price changes have failed to show any significant correlations. Fama computed serial correlations for 30 stocks for the period 1958 -62 with varying t periods from t + 1 to t + 10. The results of the autocorrelations were generally found to be insignificant, with most falling within the range of +. 10 to -. 10. If there is little correlation between stock price over time, chart analyses cannot be of much use in predicting the future.

SEMI-STRONG FORM

The semi-strong form of the efficient market hypothesis states that the security price adjusts rapidly to all publicly available information. In the semi-strongly efficient markets, security prices fully reflect all publically available information. The prices not only reflect the past price data, but also the available information regarding the earnings of the corporate, dividend, bonus issue, right issue, mergers, acquisitions and so on. In the semi-strongly efficient market a few insiders can earn a profit on a short run price changes rather than the investors who adopt the naive buy and hold policy. In the case of a competitive market, price is fixed by the supply and demand force. The price at the equilibrium level of the supply and demand represents the consensus opinion of the market. The intrinsic value of the stock and the equilibrium price are the same. Whenever a new information arrives at the market, the supply and the demand factors react to it. If the market processes the new information quickly, a new price would come out of it. If the market has to be semi-strongly efficient, timely and correct dissemination of information and assimilation of news are needed. Only then, the market can reflect all the relevant information quickly. It is stated that the stock markets in US strongly supports the semi-strong hypothesis because the prices adjust rapidly to the new information.

Empirical evidence Fama, Fisher, Jensen and Roll were the fore runners in examining the semi strong form of EMH. They analyzed the effect of stock split on share prices. Their study was important because (a) it provided evidence to semi-strong form of markets (b) it analyzed whether the stock splits increase the wealth of the shareholders and (c) they developed a research method to test the market efficiency.

STRONG FORM

The strong form EMH states that all information is fully reflected on security prices. It represents an extreme hypothesis which most observers do not expect it to be literally true. The strong form of the efficient market hypothesis maintains that not only the publicly available information is useless to the investor or analyst but all information is useless. Information whether it is public or inside cannot be used consistently to earn superior investors' return in the strong form. This implies that security analysts and portfolio managers who have access to information more quickly than the ordinary investors would not be able to use it to earn more profits

Empirical evidence Many of the tests of the strong form of the efficient market hypothesis deal with mutual fund performances. Financial analysts have studied the risk adjusted rates of return from hundreds of mutual funds and found out that the professionally managed funds are not able

to outperform the naïve- buy hold strategy. Jensen had studied 115 funds over a decade. He concluded that even though the analysts are well endowed with wide ranging contacts and associations in both the business and financial committees, they are unable to forecast returns accurately enough to recover the research and transaction costs. He holds this as a striking piece of evidence for the strong form of the efficient market hypothesis.

THE ESSENCE OF THE THEORY

According to the theory, the successive price changes or changes in return are independent and these successive price changes are randomly distributed. Random Walk Model argues that all publicly available information fully reflected on the stock prices and further the stock prices instantaneously adjust themselves to the available new information. The theory mainly deals with the successive changes rather than the price or return levels.

The investors should note that the random theory says nothing about the relative price change that is the changes that are occurring across the securities. Some securities may outperform others. Again, it does not make any remark on the decomposing of price into market, industry or firm factors. All these factors are concerned with the relative prices but not with the absolute price changes. The random walk hypothesis deals with the absolute price changes and not with the relative prices.

The prices may move at random but this does not indicate that there would not be any upward or downward movement in the price. The random walk hypothesis is entirely consistent with the upward and downward movements of the stock prices.

MARKET INEFFICIENCIES

Many studies have proved the prevalence of the market efficiency. At the same time, several study results contradict the concept of market efficiency. For example, the studies conducted Joy, Litzenberger and Me. Enally over the period of 1963-1968 gave different results. The authors have examined the quarterly earnings of the stock prices. The earning of one quarter was compared with the same quarter of the previous year. If the current year's earnings were 40% or more high than the earnings for the same quarter in the previous year, the earnings were classified as good earnings than anticipated. If the current quarter's earnings were below 40% of the previous year's earnings, they are classified as bad than expected.

LOW PE effect Many studies have provided evidences that stocks with low' price earnings ratios yield higher returns than stocks with higher PEs. This is known as low PE effect. A study made

by Basu in 1977 was risk adjusted return and even after the adjustment there was excess return in the low price-earnings stocks. If historical information of *PE* ratios is useful to the investor in obtaining superior stock returns, the validity of the semi-strong form of market hypothesis is questioned. His results stated that low *PE* portfolio experienced superior returns relative to the market and high *PE* portfolio performed in an inferior manner relative to the overall market. Since his result directly contradicts semi-strong form of efficient market hypothesis, it is considered to be important.

Small firm effect The theory of the small firm effect maintains that investing in small firms (those with low capitalization) provides superior risk adjusted returns. Banz found that the size of the firm has been highly correlated with returns. Banz examined historical monthly returns of NYSE common stocks for the period 1931-1975. He formed portfolios consisting of 10 smallest firms and the 10 largest firms and computed the average return for these portfolios. The small firm portfolio has outperformed the large firm portfolio.

Several other studies have confirmed the existence of a small firm effect. The size effects have given rise to the doubts regarding the risk associated with small firms. The risk associated with them is underestimated and they do not trade as frequently as those of the large firms. Correct measurement of risk and return of small portfolios tends to eliminate at least 50% of the small firm effect.

The weekend effect French in his study had examined the returns generated by the, Standard and Poor Index for each day of the week. Stock prices tend to rise all week long to a peak on Fridays. The stocks are traded on Monday at reduced prices, before they begin the next week's price rise. Buying on Monday and selling on Friday from 1953 to1977 would have generated average annual return of 13.4% while simple buy and hold would have yielded 5.5% annual return

MATHEMATICAL INDICATORS – MOVING AVERAGE CONVERGENCE-DIVERGENCE

The Moving Average Convergence/Divergence indicator is a momentum oscillator primarily used to trade trends. Although it is an oscillator, it is not typically used to identify over bought or oversold conditions. It appears on the chart as two lines which oscillate without boundaries. The crossover of the two lines give trading signals similar to a two moving average system.



How this indicator works

• MACD crossing above zero is considered bullish, while crossing below zero is bearish. Secondly, when MACD turns up from below zero it is considered bullish. When it turns down from above zero it is considered bearish.



- When the MACD line crosses from below to above the signal line, the indicator is considered bullish. The further below the zero line the stronger the signal.
- When the MACD line crosses from above to below the signal line, the indicator is considered bearish. The further above the zero line the stronger the signal.

RELATIVE STRENGTH INDEX

The Relative Strength Index (RSI), developed by J. Welles Wilder, is a momentum oscillator that measures the speed and change of price movements. The RSI oscillates between zero and 100. Traditionally the RSI is considered overbought when above 70 and oversold when below 30. Signals can be generated by looking for divergences and failure swings. RSI can also be used to identify the general trend.



 RSI is considered overbought when above 70 and oversold when below 30. These traditional levels can also be adjusted if necessary to better fit the security. For example, if a security is repeatedly reaching the overbought level of 70 you may want to adjust this level to 80.

Note: During strong trends, the RSI may remain in overbought or oversold for extended periods.

- RSI also often forms chart patterns that may not show on the underlying price chart, such as double tops and bottoms and trend lines. Also, look for support or resistance on the RSI.
- In an uptrend or bull market, the RSI tends to remain in the 40 to 90 range with the 40-50 zone acting as support. During a downtrend or bear market the RSI tends to stay between the 10 to 60 range with the 50-60 zone acting as resistance. These ranges will vary depending on the RSI settings and the strength of the security's or market's underlying trend.
- If underlying prices make a new high or low that isn't confirmed by the RSI, this divergence can signal a
 price reversal. If the RSI makes a lower high and then follows with a downside move below a previous low,
 a Top Swing Failure has occurred. If the RSI makes a higher low and then follows with an upside move
 above a previous high, a Bottom Swing Failure has occurred.



The RSI is a fairly simple formula, but is difficult to explain without pages of examples. Refer to Wilder's book for additional calculation information. The basic formula is:

RSI = 100 - [100 / (1 + (Average of Upward Price Change / Average of Downward Price Change))]

MODULE 5: MODERN PORTFOLIO THEORY

Markowitz Model- Diversification, Portfolio Return, Portfolio Risk, Efficient Frontier. Sharpe's Single Index Model, Capital Asset Pricing Model: Assumptions, CAPM Equation, Capital Market Line, Security Market Line, CML V/s SML. Sharpe's Optimum Portfolio Construction. (Theory & Problems).

Portfolio is a combination of securities such as stocks, bonds and money market instruments. The process of blending together the broad asset classes so as to obtain optimum return with minimum risk is called portfolio construction. Diversification of investments helps tp spread risk over many assets.

PORTFOLIO-MARKOWITZ MODEL

Harry Markowitz opened new vistas to modern portfolio selection by publishing an article in the Journal of Finance in March 1952. His publication indicated the importance of correlation among the different stocks' returns in the construction of a stock portfolio. Markowitz also showed that for a given level of expected return in a group of securities, one security dominates the other. To find out this, the knowledge of the correlation coefficients between all possible securities combinations is required.

Simple diversification

Portfolio risk can be reduced by the simplest kind of diversification. Portfolio means the group of assets an investor owns. They may vary from stocks to different types of bonds. Sometimes the portfolio may consist of securities of different industries. When different assets are added to the portfolio, the total risk tends to decrease. In the case of common stocks, diversification reduces the unsystematic risk or unique risk. Analysts opine that if 15 stocks are added in a portfolio of the investor, the unsystematic risk can be reduced to zero. But at the same time if the number exceeds 15, additional risk reduction cannot be gained. But diversification cannot reduce systematic or undiversifiable risk.

In the case of simple diversification, securities are selected at random and no analytical procedure is used.

Total risk of the portfolio consists of systematic and unsystematic risk and this total risk is measured by the variance of the rates of returns overtime. Many studies have shown that the systematic risk forms one quarter of the total risk.

The simple random diversification reduces the total risk. The reason behind this is that the unsystematic price fluctuations are not correlated with the market's systematic fluctuations. The figure shows how the simple diversification reduces the risk. The standard deviations of the portfolios are given in Y axis and the number of randomly selected portfolio securities in the X axis.



The standard deviation was calculated for each portfolio and plotted. As the portfolio size increases, the total risk line starts declining. It flattens out after a certain point. Beyond that limit, risk cannot be reduced. This indicates that spreading out the assets beyond certain level cannot be expected to reduce the portfolio's total risk below the level of undiversifiable risk.

The Markowitz Model

Most people agree that holding two stocks is less risky than holding one stock. For example, holding stocks from textile, banking, and electronic companies is better than investing all the money on the textile company's stock. But building up the optimal portfolio is very difficult. Markowitz provides an answer to it with the help of risk and return relationship.

Assumptions – The individual investor estimates risk on the basis of variability of returns i.e. the variance of returns. Investor's decision is solely based on the expected return and variance of return only.

For a given level of risk, investor prefers higher return to lower risk than higher risk.

The Concept-In the world of uncertainty, most of the risk averse investors would like to join Markowitz rather than keeping a single stock, because diversification reduces the risk.

UTILITY ANALYSIS

Utility is the satisfaction the investor enjoys from the portfolio return. An ordinary investor is assumed to receive greater utility from higher return and vice-versa. The investor gets more satisfaction or utility in X+1 rupees than from X rupee. If he is allowed to choose between two certain investments, he would always like to take the one with larger outcome. Thus, utility increases with increase in return.

The utility function makes certain assumptions about an investors' taste of risk. The investors are categorized into risk averse, risk neutral and risk seeking investor. All the three types can be explained with the help of a fair gamble.

Risk averse rejects a fair gamble because the disutility of the loss is greater for him than the utility of an equivalent gain. *Risk neutral* investor means that he is indifferent to whether a fair gamble is undertaken or not. The *risk seeking* investor would select a fair gamble i.e. he would choose to invest. The expected utility of investment is higher than the expected utility of not investing.

The curves ABC are three different slopes of utility curves. The upward sloping curve A shows increasing marginal utility. The straight line B shows constant utility, and curve C shows diminishing marginal utility. The constant utility, a linear function means doubling of returns would double the utility and it indicates risk neutral situation. The increasing marginal utility suggests that the utility increases more than proportion to increase in return and shows the risk lover. The curve C shows the risk averse investor. The utility he gains from additional return declines gradually.



Investors generally like to get more returns for additional risks assumed and the lines would be positively sloped. The risk lover's utility curves are negatively sloped and converge towards the origin. For the risk fearing, lower the risk of the portfolio, happier he would be. The degree of the slope of indifference curve indicates the degree of risk aversion.

Leveraged Portfolios

In the above model, the investor is assumed to have a certain amount of money to make investment for a fixed period of time. There is no borrowing and lending opportunities. When the investor is not allowed to use the borrowed money, he is denied the opportunity of having financial leverage. Again, the investor is assumed to be investing only on the risky assets. Riskless assets are not included in the portfolio. To have a leveraged portfolio, investor has to consider not only risky assets but also risks free assets. Secondly, he should be able to borrow and lend money at a given rate of interest.

What is Risk Free Asset?

The features of risk free assets are:

- Absence of default risk and interest risk.
- ▶ Full payment of principal and interest amount.

The return from the risk free asset is certain and the standard deviation of the return is nil. The relationship between the rate of return of the risk free asset and risky asset is zero. These types of assets are usually fixed income securities. But fixed income securities issued by private institutions have the chance of default. If the fixed income securities are from the government, they do not possess the default risk and the return from them are guaranteed.

Inclusion of Risk Free Asset

Now, the risk free asset is introduced and the investor can invest part of his money on risk free asset and the remaining amount on the risky asset. It is also assumed that the investor would be able to borrow money at risk free rate of interest. When risk free asset is included in the portfolio, the feasible efficient set of the portfolios is altered. OR_f is gained with zero risk and the return is earned through holding risk free asset. Now, the investor would attempt to maximize his expected return and risk relationship by purchasing various combinations of riskless asset and risky assets. He would be moving on the line connecting attainable portfolio A and risk free portfolio R_F i.e. the line R_FA , part of his money is invested in fixed income securities i.e. he has lent some amount of money and invested the rest in the risky asset within the point R_FM . He is depending upon his own funds. But, if he moves beyond the point M to B he would be borrowing money. Hence the portfolios located between the points AM are lending portfolios and beyond the point M consists of borrowing portfolios. Holding portfolio in AM segment with risk free securities would actually reduce risk more than the reduction in return.

CML Borrowing Efficient ading Frontier Μ

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EFFICIENT FRONTIER

The **efficient frontier** is a concept in modern portfolio theory introduced by Harry Markowitz and others. A combination of assets, i.e. a portfolio, is referred to as "efficient" if it has the best possible expected level of return for its level of risk (usually proxied by the standard deviation of the portfolio's return). Here, every possible combination of risky assets, without including any holdings of the risk-free asset, can be plotted in risk-expected return space, and the collection of all such possible portfolios defines a region in this space. The upward-sloped (positively-sloped) part of the left boundary of this region, a hyperbola, is then called the "efficient frontier". The efficient frontier is then the portion of the opportunity set that offers the highest expected return for a given level of risk, and lies at the top of the opportunity set or the feasible set. For further detail see modern portfolio theory.



CAPITAL ASSET PRICING MODEL (CAPM) THEORY

The required rate of return of an asset is having linear relationship with asset's beta (undiversifiable or systematic risk).

Assumptions of CAPM

- 1. An individual seller or buyer cannot affect the price of a stock.
- 2. Investors can borrow or lend any amount of money at the risk-free rate of return

- 3. All investors have homogeneous expectations; that is, they estimate identical probability distributions for future rates of return.
- 4. All investments are infinitely divisible, which means that it is possible to buy or sell fractional shares of any asset or portfolio.
- 5. There are no taxes or transaction costs involved in buying or selling assets.
- 6. There is no inflation or any change in interest rates, or inflation is fully anticipated.
- 7. Investors make their decisions only on the basis of the expected returns deviations and covariances of all pairs of securities.
- Unlimited quantum of short sales is allowed. Any amount of shares an individual can sell short.

Lending and borrowing

Lending and borrowing Here, it is assumed that the investor could borrow or lend any amount of money at riskless rate of interest. When this opportunity is given to the investors, they can mix risk free assets with the risky assets in a portfolio to obtain a desired rate of risk-return combination. This formula can be used to calculate the expected returns for different situations, like mixing riskless assets with risky assets, investing only in the risky asset and mixing the borrowing with risky assets.

Now, let us assume that borrowing and lending rate to be 12.5% and the return from the risky assets to be 20%. There is a tradeoff between the expected return and risk. If an investor invests in risk free assets and risky assets, his risk may be less than what he invests in the risky asset alone. But if he borrows to invest in risky assets, his risk would increase more than he invests his own money in the risky assets. When he borrows to invest, we call it financial leverage. If he invests 50% in risk free assets and 50% in risky assets, his expected return of the portfolio would be



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The line $R_f M$ represents all possible combination of riskless and risky asset. The 'M' portfolio does not represent any riskless asset but the line $R_f M$ gives the combination of both. The portfolio along the path $R_f M$ is called lending portfolio that is some money is invested in the riskless asset or may be deposited in the bank for a fixed rate of interest. If it crosses the point M, it becomes borrowing portfolio. Money is borrowed and invested in the risky asset. The straight line is called capital market line (CML). It gives the desirable set of investment opportunities between risk free and risky investments. The CML represents linear relationship between the required rates of return for efficient portfolios and their standard deviations.

For a portfolio on the capital market line, the expected rate of return in excess of the risk free rate is in proportion to the standard deviation of the market portfolio. The price of the risk is given by the slope of the line. The slope equals the risk premium for the market portfolio Rm -Rf divided by the risk or standard deviation of the market portfolio. Thus, the expected return of an efficient portfolio is

Expected return = Price of time + (Price of risk x Amount of risk)

Price of time is the risk free rate of return. Price of risk is the premium amount higher and above the risk free return.

Security market line

The risk-return relationship of an efficient portfolio is measured by the capital market line. But, it does not show the risk-return tradeoff for other portfolios and individual securities. Inefficient portfolios lie below the capital market line and the risk-return relationship cannot be established with the help of the capital market line. Standard deviation includes the systematic and **Dr. Deepak Kumar D, Assoc. Professor, Mr. Chandan L, Asst. Professor, Mr. Harsha R Assistant Professor RNSIT**
unsystematic risk. Unsystematic risk can be diversified and it is not related to the market. If the unsystematic risk is eliminated, then the matter of concern is systematic risk alone. This systematic risk could be measured by beta. The beta analysis is useful for individual securities and portfolios whether efficient or inefficient.



Empirical tests of the CAPM In the CAPM, beta is used to estimate the systematic risk of the ~ty and reflects the future volatility of the stock in relation to the market. Future volatility of the stock is estimated only through historical data. Historical data are used to plot the regression line or the characteristic line and calculate beta. If historical betas are stable over a period of time, they would be good proxy for their expected return or expected risk.

Robert A. Levy, Marshall E. Blume and others have studied the question of beta stability indepth. Levy calculated betas for both individual securities and portfolios. His study results have provided the following conclusions

(1) The betas of individual stocks are unstable; hence the past betas for the individual securities are not good estimators of future risk.

(2) The betas of portfolios of ten or more randomly selected stocks are reasonably stable, hence the past portfolio betas are good estimators of future portfolio volatility. This is because of the errors in the estimates of individual securities' betas tend to offset one another in a portfolio.

Various researchers have attempted to find out the validity of the model by calculating beta and realised rate of return. They attempted to test (1) whether the intercept is equal to Rf risk free rate of interest or the interest rate offered for treasury bills (2) whether the line is linear and pass

through the beta = I being the required rate of return of the market. In general, the studies have showed the following results.

(1) The studies generally showed a significant positive relationship between the expected return and the systematic risk. But the slope of the relationship is usually less than that of predicted by the CAPM.

(2) The risk and return relationship appears to be linear. Empirical studies give no evidence of significant curvature in the risk/return relationship.

(3) The attempt of the researchers to assess the relative importance of the market and company risk has yielded definite results. The CAPM theory implies that unsystematic risk is not relevant, but unsystematic and systematic risks are positively related to security returns. Higher returns are needed to compensate both the risks. Most of the observed relationship reflects statistical problems rather than the true nature of capital market.

(4) According to Richard Roll, the ambiguity of the market portfolio leaves the CAPM untestable. The practice of using indices as proxies is loaded with problems. Different indices yield different betas for the same security.

(5) If the CAPM were completely valid, it should apply to all financial assets including bonds. But, when bonds are introduced into the analysis, they do not fall on the security market line.

Present validity of CAPM: The CAPM is greatly appealing at an intellectual level, logical and rational. The basic assumptions on which the model is built raise, some doubts in the minds of the investors. Yet, investment analysts have been more creative in adapting CAPM for their uses.

(1) The CAPM focuses on the market risk, makes the investors to think about the riskiness of the assets in general. CAPM provides a basic concept which is truly of fundamental value.

(2) The CAPM has been useful in the selection of securities and portfolios. Securities with higher returns are considered to be undervalued and attractive for buy. The below normal expected return yielding securities are considered to be overvalued and suitable for sale.

(3) In the CAPM, it has been assumed that investors consider only the market risk. Given the estimate of the risk free rate, the beta of the firm, stock and the required market rate of return, one can find out the expected returns for a firm's security. This expected return can be used as an estimate of the cost of retained earnings.

(4) Even though CAPM has been regarded as a useful tool to financial analysts, it has its own critics too. They point out, that the inputs also should be based on the expectations of the future. Empirical tests and analyses have used past data only.

(5) The historical data regarding the market return, risk free rate of return and betas vary differently for different periods. The various, methods used to estimate these inputs also affect the beta value. Since the inputs cannot be estimated precisely, the expected return found out through the CAPM model is also subjected to criticisms.

DIFFERENCE BETWEEN CML AND SML

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

ARBITRAGE PRICING THEORY

Arbitrage pricing theory is one of the tools used by the investors and portfolio managers. The capital asset pricing theory explains the returns of the securities on the basis of their respective betas. According to the previous models, the investor chooses the investment on the basis of expected return and variance. The alternative model developed in asset pricing by Stephen Ross is known as arbitrage Pricing Theory. The APT theory explains the nature of equilibrium in the asset pricing in a less complicated manner with fewer assumptions compared to CAPM.

Arbitrage: Arbitrage is a process of earning profit by taking advantage of differential pricing for the same asset. The process generates riskless profit. In the security market, it is of selling security at a high price and the simultaneous purchase of the same security at a relatively lower price. Since the profit earned through arbitrage is riskless, the investors have the incentive to undertake this whenever an opportunity arises. In general, some investors indulge more in this type of activities

than others. However, the buying and selling activities of the arbitrageur reduce and eliminate the profit margin, bringing the market price to the equilibrium level.

The assumptions

- 1. The investors have homogenous expectations.
- 2. The investors are risk averse and utility maximisers.
- 3. Perfect competition prevails in the market and there is no transaction cost.

The APT theory does not assume (I) single period investment horizon, (2) no taxes (3) investors can borrow and lend at risk free rate of interest and (4) the selection of the portfolio is based on the mean and variance analysis. These assumptions are present in the CAPM theory.

Arbitrage portfolio According to the APT theory an investor tries to find out the possibility to increase returns from his portfolio without increasing the funds in the portfolio. He also likes to keep the risk at the same level. For example, the investor holds A, Band C securities and he wants to change the proportion of the securities without any additional financial commitment. Now the change in proportion of securities can be denoted by Xa , Xb, and Xc . The increase in the investment in security A could be carried out only if he reduces the proportion of investment either in B or C because it has already stated that the investor tries to earn more income without increasing his financial commitment. Thus, the changes in different securities will add up to zero. This is the basic requirement of an arbitrage portfolio. If X indicates the change in proportion,

 $\Delta Xa + \Delta Xb + \Delta Xc = 0$

APT and CAPM

The APT differs from the CAPM in that it is less restrictive in its assumptions. It allows for an explanatory (as opposed to statistical) model of asset returns. It assumes that each investor will hold a unique portfolio with its own particular array of betas, as opposed to the identical "market portfolio". In some ways, the CAPM can be considered a "special case" of the APT in that the securities market line represents a single-factor model of the asset price, where beta is exposed to changes in value of the market.

Additionally, the APT can be seen as a "supply-side" model, since its beta coefficients reflect the sensitivity of the underlying asset to economic factors. Thus, factor shocks would cause structural changes in assets' expected returns, or in the case of stocks, in firms' profitability.

On the other side, the capital asset pricing model is considered a "demand side" model. Its results, although similar to those of the APT, arise from a maximization problem of each investor's utility

function, and from the resulting market equilibrium (investors are considered to be the "consumers" of the assets).

MODULE 6 Portfolio Management Strategies and Performance Evaluation

Portfolio Management Strategies: Active and Passive Portfolio Management strategy. Portfolio Revision: Portfolio Revision Strategies – Objectives, Performance plans. Mutual Funds: Concept of Mutual Funds, Participants in Mutual Funds, Advantages of Investment in Mutual Fund, Measure of Mutual Fund Performance. Portfolio performance Evaluation: Measures of portfolio performance (Theory & Problems).

Portfolio Management strategy

Passive management

Passive management is a process of holding a well-diversified portfolio for a long term with the buy and hold approach. Passive management refers to the investor's attempt to construct a portfolio that resembles the overall market returns. The simplest form of passive management is holding the index fund that is designed to replicate a good and well defined index of the common stock such as BSE-Sensex or NSE-Nifty. The fund manager buys every stock in the index in exact proportion of the stock in that index. If Reliance Industry's stock constitutes 5% of the index, the fund also invests 5 % of its money in Reliance Industry stock.

The problem in the index fund is the transaction cost. If it is NSE-Nifty, the manager has to buy all the 50 stocks in market proportion and cannot leave the stocks with smallest weights to save the transaction costs. Further, the reinvestment of the dividends also poses a problem. Here, the alternative is to keep the cash in hand or to invest the money in stocks incurring transaction cost. Keeping away the stock of smallest weights and the money in hand fail to replicate the index fund in the proper manner. The commonly used approaches in constructing an index fund are as follows: 1.Keeping each stock in proportion to its representation in the index

2. Holding a specified number of stocks for example 20, which historically track the index in the best manner.

3. Holding a smaller set of stocks to match the index in a pre-specified set of characteristics. This may be in terms of sector, industry and the market capitalization.

Active management

Active Management is holding securities based on the forecast about the future. The portfolio managers who pursue active strategy with respect to market components are called 'market timers'. The portfolio managers vary their cash position or beta of the equity portion of the portfolio based

on the market forecast. The managers may indulge in group rotations. Here, the group rotation means changing the investment in different industries; stocks depending on the assessed expectations regarding their future performance.

Stocks that seem to be best bets or attractive are given more weights in the portfolio than their weights in the index. For example, Information Technology or Fast Moving Consumer Goods industry stocks may be given more weights than their respective weights in the NSE-50. At the same time, stocks that are considered to be less attractive are given lower weights compared to their weights in the index. Here, the portfolio manager may either remain passive with respect to market and group components but active in the stock selection process or he may be active in the market, group and stock selection process.

PORTFOLIO PERFORMANCE EVALUATION

Treynor's measure

Treynor's measure basically gives us a measure of return per unit of market risk (or systematic risk) that our investment earns. Strictly speaking, the larger the Treynor measure the better. However, we would like to have some benchmark with which to compare our individual Treynor measures

$$T_i = \frac{R_i - R_f}{\beta}$$

Sharpe performance measure: Thus, the Sharpe measure gives us a measure of return per unit of total risk. Again, the higher the Sharpe measure, the better the performance. We can also compare individual Sharpe measures to a benchmark:

$$S_i = \frac{R_i - R_f}{\sigma_i}$$

Comparing the Treynor and Sharpe measures

- For a completely diversified portfolio of assets, the Sharpe and Treynor measures would be identical in what they are measuring
- Treynor measures performance relative to systematic risk
- Sharpe measures performance relative to total risk

Jensen's Performance Index: it is a measure absolute performance because a definite standard is set and against that the performance is measured. The standard is based on the manager's predictive

ability. Successful prediction of security price would enable the manager to earn higher returns than the ordinary investor expects to earn in a given level of risk.

 $Rp-Rf = \alpha + \beta (Rm-Rf)$

PORTFOLIO REVISION

The portfolio management process needs frequent changes in the composition of stocks and bonds. In securities, the type of securities to be held should be revised according to the portfolio policy. If the policy of investor shifts from earnings to capital appreciation, the stocks should be revised accordingly.

The formula plans

The formula plans provide the basic rules and regulations for the purchase and sale of securities. The amount to be spent on the different types of securities is fixed. The amount may be fixed either in constant or variable ratio. This depends on the investor's attitude towards risk and return. The commonly used formula plans are rupee cost averaging, constant rupee value, the constant ratio and the variable ratio plans. The formula plans help to divide the investible fund between the aggressive and conservative portfolios.

The aggressive portfolio consists more of common stocks which yield high return with high risk. The aggressive portfolio's return is volatile because the share prices generally fluctuate. The conservative portfolio consists of more bonds that have fixed rate of returns. It is called conservative portfolio because the return is certain and the risk is less.

Assumptions of the formula plan

- The first assumption is that certain percentage of the investor's fund is allocated to fixed income securities and common stocks. The proportion of money invested in each component depends on the prevailing market condition. If the stock market is in the boom condition lesser funds are allotted to stocks.
- 2. The second assumption is that if the market moves higher, the proportion of stocks in the portfolio may either decline or remain constant. The portfolio is more aggressive in the low market and defensive when the market is on the rise.
- 3. The third assumption is that the stocks are bought and sold whenever there is a significant change in the price. The changes in the level of market could be measured with the help of indices like BSE-Sensitive Index and NSE-Nifty.

- 4. The fourth assumption requires that the investor should strictly follow the formula plan once he chooses it.
- 5. The investors should select good stocks that move along with the market. They should reflect the risk and return features of the market. The stock price movement should be closely correlated with the market movement and the beta value should be around 1.

Rupee Cost Averaging

The simplest and most effective formula plan is rupee cost averaging. First, stocks with good fundamentals and long-term growth prospects should be selected. Such stocks' prices tend to be volatile in the market and provide maximum benefit from rupee cost averaging. Secondly, the investor should make a regular commitment of buying shares at regular intervals. Once he makes a commitment, he should purchase the shares regardless of it stock's price, the company's short term performance arid the economic factors affecting the stock market.

Constant Rupee Plan

Constant rupee, constant ratio and variable ratio plans are considered to be true formula timing plans. These plans force the investor to sell when the prices rise and purchase as prices fall. Forecasts are not required to guide buying and selling. The actions suggested by the formula timing plan automatically help the investor to reap the benefits of the fluctuations in the stock prices.

The essential feature of this plan is that the portfolio is divided into two parts, which consists of aggressive and defensive or conservative portfolios. The portfolio mix facilitates the automatic selling and buying of bonds and stocks.

The plan The constant rupee plan enables the shift of investment from bonds to stocks and viceversa by maintaining a constant amount invested in the stock portion of the portfolio. The constant rupee plan starts with a fixed amount of money invested in selected stocks and bonds. When the price of the stocks increases, the investor sells sufficient amount of stocks to return to the original amount of the investment in stocks. By keeping the value of aggressive portfolio constant, remainder is invested in the conservative portfolio.

The investor must choose action points or revaluation points. The action points are the times at which the investor has to readjust the values of the stocks in the portfolio. Stocks' values cannot be continuously the same and the investor has to be watchful of the market price movements. Stocks' value in the portfolio can be allowed to fluctuate to a certain extent. Percentage change in price like 5 %, 10% or 20% can be fixed by the investor. Allowing only small percentage change

would result in a lot of transaction cost and would not be beneficial to the investor. If the action points are too large, the investor may not be able get full benefit out of the price fluctuations.

Constant Ratio Plan

Constant ratio plan attempts to maintain a constant ratio between the aggressive and conservative portfolios. The ratio is fixed by the investor. The investor's attitude towards risk and return plays a major role in fixing the ratio. The conservative investor may like to have more of bond and the aggressive investor, more of stocks. Once the ratio is fixed, it is maintained as the market moves up and down. As usual, action points may be fixed by the investor. It may vary from investor to investor. As in the previous example, when the stock price moves up or down by 10 to 20 per cent action would be taken. Here, 10 per cent is taken as action point.

Variable ratio plan

According to this plan, at varying levels of market price, the proportions of the stocks and bonds change. Whenever the price of the stock increases, the stocks are sold and new ratio is adopted by increasing the proportion of defensive or conservative portfolio. To adopt this plan, the investor is required to estimate a long term trend in the price of the stocks. Forecasting is very essential to this plan. When there is a wide fluctuation variable ratio plan is useful.

MUTUAL FUND: Functions of Investment companies

An investment company is a financial services firm that holds securities of other companies purely for investment purposes. Investment companies come in different forms: exchange-traded funds, mutual funds, money-market funds, and index funds. Investment companies collect funds from institutional and retail investors and are assigned with making investments in financial instruments according to the objectives of the investors.

Collect Investments

Investment companies collect funds by issuing and selling shares to investors. *There are two types of investment companies:* closed-end and open-end companies. Close-end companies issue a limited amount of shares that can then be traded in the secondary market--on a stock exchange--whereas open-end company funds, e.g. mutual funds, issue new shares every time an investor wants to buy its stocks.

Invest in Financial Instruments

Investment companies invest in financial instruments according to the strategy of which that they made investors aware. There is a wide range of strategies and financial instruments that investment companies use, offering investors different exposures to risks. Investment companies invest in equities (stocks), fixed-income (bonds), currencies, commodities, and other assets.

INTRODUCTION TO MUTUAL FUND

A Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal. The money thus collected is then invested in capital market instruments such as shares, debentures, and other securities. The income earned through these investments and the capital appreciations realized is shared by its unit holders in proportion to the number of units owned by them. Thus, a Mutual Fund is the most suitable investment for the common man as it offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost.

Every Mutual Fund is managed by a fund manager, who using his investment management skills and necessary research works ensures a much better return than what an investor can manage on his own.

When an investor subscribes for the units of a mutual fund, he becomes part-owner of the assets of the fund in the same proportion as his contribution amount put up with the corpus (the total amount of the fund). A Mutual Fund investor is also known as a mutual fund shareholder or a unitholder. Any change in the value of the investments made into capital market instruments (such as shares, debentures, etc) is reflected in the **Net Asset Value** (**NAV**) of the scheme.

Pay Out the Profits

The profits and losses that an investment company makes are shared among its shareholders. Depending on the type--closed-end or open-end--and the structure of the investment company, investors can redeem their shares for cash from the company, sell the shares to another firm or individual, or receive capital distributions when assets are held by the investment company are sold.



ADVANTAGES OF INVESTING MUTUAL FUNDS

1. **Professional Management** - The basic advantage of funds is that they are professionally managed, by well-qualified professionals. Investors purchase funds because they do not have the time or the expertise to manage their portfolios. A mutual fund is considered to be a relatively less expensive way to make and monitor their investments.

2. **Diversification** - Purchasing units in a mutual fund instead of buying individual stocks or bonds, the investor's risk is spread out and minimized up to a certain extent. The idea behind diversification is to invest in a large number of assets so that a loss in any particular investment is minimized by gains in others.

3. Economies of Scale - Mutual funds buy and sell large amounts of securities at a time, thus helping to reduce transaction costs and help to bring down the average cost of the unit for their investors.

4. **Liquidity** - Just like an individual stock, a mutual fund also allows investors to liquidate their holdings as and when they want.

5. **Simplicity** - Investments in a mutual fund are considered to be easy, compare to other available instruments in the market, and the minimum investment is small. Most AMC also has automatic purchase plans whereby as little as Rs. 2000, where SIP starts with just Rs.50 per month basis.

DISADVANTAGES OF INVESTING IN MUTUAL FUNDS:

1. **Professional Management**- Some funds don't perform in either the market, as their management is not dynamic enough to explore the available opportunity in the market, thus many investors debate over whether or not the so-called professionals are any better than a mutual fund or investor himself, for picking up stocks.

2. **Costs** – The biggest source of AMC income is generally from the entry & exit load which they charge from investors, at the time of purchase. The mutual fund industries are thus charging extra costs under layers of jargon.

3. **Dilution** - Because funds have small holdings across different companies, high returns from a few investments often don't make much difference on the overall return. Dilution is also the result of a successful fund getting too big. When money pours into funds that have had strong success, the manager often has trouble finding a good investment for all the new money.

4. **Taxes** - when making decisions about your money, fund managers don't consider your tax situation. For example, when a fund manager sells a security, a capital-gain tax is triggered, which affects how profitable the individual is from the sale. It might have been more advantageous for the individual to defer the capital gains liability.

TYPE OF MUTUAL FUND SCHEMES

Open-Ended Schemes

An open-end fund is available for subscription all through the year. These do not have a fixed maturity. Investors can conveniently buy and sell units at Net Asset Value ("NAV") related prices. The key feature of open-end schemes is liquidity.

Close Ended Schemes

A closed-end fund has a stipulated maturity period which generally ranges from 3 to 15 years. The fund is open for subscription only during a specified period. Investors can invest in the scheme at the time of the initial public issue and thereafter they can buy or sell the units of the scheme on the stock exchanges where they are listed. To provide an exit route to the investors, some close-ended funds give an option of selling back the units to the Mutual Fund through periodic repurchase at NAV-related prices. SEBI Regulations stipulate that at least one of the two exit routes is provided to the investor.

Interval Schemes

Interval Schemes are that scheme, which combines the features of open-ended and close-ended schemes. The units may be traded on the stock exchange or may be open for sale or redemption during pre-determined intervals at NAV-related prices.

Based on their investment objective:

Equity funds: These funds invest in equities and equity-related instruments. With fluctuating share prices, such funds show volatile performance, even losses. However, short-term fluctuations

in the market, generally smoothen out in the long term, thereby offering higher returns at relatively lower volatility. At the same time, such funds can yield great capital appreciation as, historically, equities have outperformed all asset classes in the long term. Hence, investment in equity funds should be considered for at least 3-5 years. It can be further classified as:

Index funds- In this case, a key stock market index, like BSE Sensex or Nifty is tracked. Their portfolio mirrors the benchmark index both in terms of composition and individual stock weightings.

Equity diversified funds- 100% of the capital is invested in equities spreading across different sectors and stocks.

Dividend yield funds- it is similar to the equity diversified funds except that they invest in companies offering high dividend yields.

Thematic funds- invest 100% of the assets in sectors that are related through some theme. e.g. - An infrastructure fund invests in power, construction, cements sectors, etc.

Sector funds- invest 100% of the capital in a specific sector. e.g. - A banking sector fund will invest in banking stocks.

ELSS- Equity Linked Saving Scheme provides a tax benefit to the investors.

Balanced fund: Their investment portfolio includes both debt and equity. As a result, on the riskreturn ladder, they fall between equity and debt funds. Balanced funds are the ideal mutual fund's vehicle for investors who prefer spreading their risk across various instruments. Following are balanced funds classes:

Debt-oriented funds - Investment below 65% inequities.

Equity-oriented funds -Invest at least 65% in equities, remaining in debt.

Debt fund: They invest only in debt instruments, and are a good option for investors averse to the idea of taking the risk associated with equities. Therefore, they invest exclusively in fixed-income instruments like bonds, debentures, Government of India securities; and money market instruments such as certificates of deposit (CD), commercial paper (CP), and call money. Put your money into any of these debt funds depending on your investment horizon and needs.

Liquid funds- These funds invest 100% in money market instruments, a large portion being invested in the call money market.

Gilt funds - They invest 100% of their portfolio in government securities and T-bills.

Floating rate funds - Invest in short-term debt papers. Floaters invest in debt instruments that have variable coupon rates.

MIPS- Monthly Income Plans have an exposure of 70%-90% to debt and an exposure of 10%-30% to equities.

Capital Protection Oriented Schemes

Capital Protection Oriented Schemes are schemes that endeavor to protect the capital as the primary objective by investing in high-quality fixed income securities and generate capital appreciation by investing in equity/equity-related instruments as a secondary objective. The first Capital Protection Oriented Fund in India, Franklin Templeton Capital Protection Oriented Fund opened for subscription on October 31, 2006.

Gold Exchange Traded Funds

It offers investors an innovative, cost-efficient, and secure way to access the gold market. Gold ETFs are intended to offer investors a means of participating in the gold bullion market by buying and selling units on the Stock Exchanges, without taking physical delivery of gold. The first Gold ETF in India, Benchmark GETF, opened for subscription on February 15, 2007, and was listed on the NSE on April 17, 2007.

Fund of Funds (FOFs)

Fund of Funds are schemes that invest in other mutual fund schemes. The portfolio of these schemes comprises only units of other mutual fund schemes and cash/money market securities/short-term deposits pending deployment. The first FOF was launched by Franklin Templeton Mutual Fund on October 17, 2003. Fund of Funds can be Sector-specific e.g. Real Estate FOFs, Theme specific e.g. Equity FOFs, Objective specific e.g. Life Stages FOFs, or Style specific e.g.Aggressive/ Cautious FOFs, etc. Please bear in mind that anyone scheme may not meet all your requirements for all time. You need to place your money judiciously in different schemes to be able to get the combination of growth, income, and stability that is right for you. Remember, as always, the higher the return you seek higher the risk you should be prepared to take.

INVESTMENT STRATEGIES

1. Systematic Investment Plan: under this a fixed sum is invested each month on a fixed date of a month. Payment is made through postdated cheques or direct debit facilities. The investor gets

fewer units when the NAV is high and more units when the NAV is low. This is called the benefit of Rupee Cost Averaging (RCA)

2. Systematic Transfer Plan: under this, an investor invests in the debt-oriented fund and gives instructions to transfer a fixed sum, at a fixed interval, to an equity scheme of the same mutual fund.

3. Systematic Withdrawal Plan: if someone wishes to withdraw from a mutual fund then he can withdraw a fixed amount each month.

MUTUAL FUND EVALUATION

Key Financial Numbers

As a participant in a mutual fund scheme, you should understand the following

- Asset mix
- Net asset value
- Market price, -repurchase price, and reissue price
- Discount
- Rate of return
- Standard deviation
- Ex-Mark (or R^2)
- Beta
- Gross yield
- Portfolio turnover ratio
- Expense ratio
- Alpha

Asset Mix: The asset mix of a scheme refers to the allocation of the corpus of a scheme across three broad asset categories, viz., stocks, bonds, and cash. An asset mix of 60:30:10 means that 60 percent of the corpus is invested in stocks, 30 percent in bonds, and 10 percent in cash.

Net Asset Value: The net asset value (NAV) is the actual value of a share/unit on any business day. It is computed as follows:

NAV= Market value of the fund's investments + Receivables + Accrued income -Liabilities - Accrued expenses/ Number of shares or units outstanding.

Entry and Exit Loads: Entry load is the load imposed when the investor purchases the units and exit load is the load imposed when the investor redeems the units.

Market Price, Repurchase Price, and Reissue Price: A closed-ended scheme has to be necessarily listed on a recognized stock exchange to ensure that its participants enjoy liquidity. Generally, the market price of a closed-ended scheme tends to be lower than its NAV. If the market price is lower than the NAV, the scheme is said to be selling at a discount; if it is higher, the scheme is said to be selling at a premium. In addition to listing, the mutual fund may also offer the facility of repurchase. The repurchase price is usually linked to the NAV.

Unlike a closed-ended scheme, an open-ended scheme is not ordinarily listed on the stock exchange. Hence, the mutual fund has to stand ready to repurchase and issue its units or shares continuingly. The repurchase and reissue prices are, of course, closely linked to the NAV.

Discount: Closed-ended schemes typically sell at a discount } which may sometimes be very steep, over their NAV. Why? According to Benjamin Graham, the reason lies in the structure, not the performance, of such schemes. They are perhaps not well-suited for any important group of investors. The small and naive investors are allured towards the open-ended schemes as they are sold more aggressively; the large and sophisticated investors may find mutual funds, in general, not very appealing; the speculators also have little interest in the ordinary closed-ended scheme as it lacks the excitement of a specific scrip.

Rate of Return: The periodic (the period may be one month, one quarter, one year, or any other) rate of return on a mutual fund scheme.

Standard Deviation: The standard deviation of returns, a measure of dispersion, is the square root of the mean of the square of deviations around the arithmetic average. Generally, standard deviation, Ex-Mark, and beta are computed taking monthly returns into account for a period of three to five years.

Ex-Mark: This is a term coined by John C. Bogle to define the extent to which a return of a mutual fund is explained by a particular financial *Market*. This concept is designated in statistics as R-squared. The Ex-Mark of a typical mainstream equity fund is 80-90 percent.

Beta: The beta of a fund measures its past price volatility relative to a particular stock market index. It is a measure of risk that provides useful statistical information, particularly when applied to portfolios (as distinct from individual stocks). Most mainstream equity funds have betas in the range of 0.85 to 1.05.

Alpha: Alpha measures the extra return earned on a scheme on a risk-adjusted basis.

Gross Dividend Yield: The gross dividend yield is an important indicator of the investment characteristics of a mutual fund. Among equity funds, value-oriented funds tend to have a higher gross dividend yield and growth-oriented funds tend to have a lower gross dividend yield. The gross dividend yield is a reliable differentiator of a fund's investment philosophy.

Portfolio Turnover Ratio: Portfolio turnover represents the churn in the portfolio. It is measured as follows:

Portfolio turnover ratio = Lower of purchase or sales during a given period Average daily net assets **Expense Ratio:** Expense ratio refers to the annual recurring costs as a percentage of the net assets of the scheme. These are discussed fully in the next section.