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LESSON NO. 1.1

INVESTMENT MANAGEMENT

1.1.1 Objective

The objective of this chapter is to describe the principles of investment and features of investment programmes including the concept of Risk and return.

1.1.2 Introduction

The term 'Investment' in simple words is the current commitment of money or other resources in the expectation of reaping future benefits.

The word 'Investment' has many connotations. For example, if a portfolio manager, buys shares worth Rs. 10,000, he is said to have invested his funds. Similarly, you

purchase bonds for Rs. 5,000, you are also investing. But when you make a down payment for your vehicle, are you investing?

The term 'investment' denotes commitment of funds, made in expectation of some positive rate of return. To a layman, it means putting away money and thereby postponing consumption with the aim of achieving additional income. The present subject tries to quantity the steps in achieving optimum investment plan and consistently.

(l)   Investment Versus Speculation : An investment is a commitment of funds made in expectation of some positive rate of return over long period of time.

The speculator is interested in extremely high rate of returns in a short time and then put the money some where else to reap great returns again.

'Investment', for our purpose, would simply mean postponed consumption. Whenever

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you decide to buy any shares, bonds or any other financial assets in favour of consuming your income, you are investing. Investing can not be confined to the sphere of financial assets only. The time you are spending on your studies is also an investment.If you are putting your money in real assets like buying a house, then also you are postponing consumption and therefore investing.

Investment Activity
(Acquisition of assets)
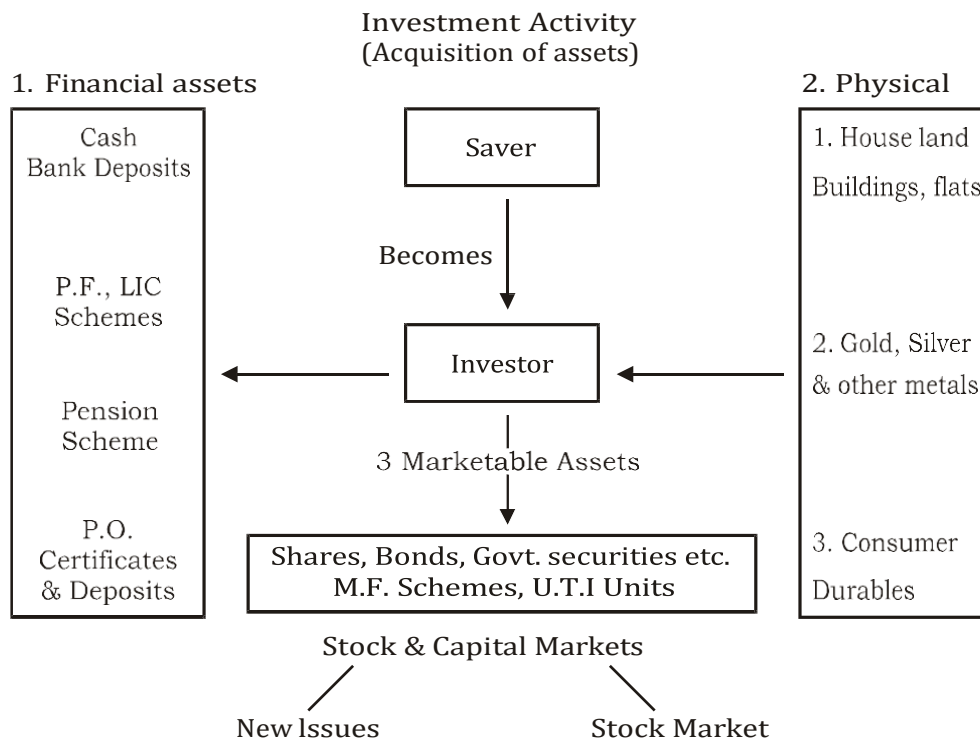
Investment Process :

The investment process is generally described in five stages : The investment policy, investment analysis, valuation of securities, portfolio construction, It is followed by portfolio review or revision at regular intervals.

The investment for the purpose of this chapter means buying and selling securities or simply investing in securities. Before plunging into the share market blindly the investor has to analyse its needs and make pronastions for such things as savings, adequate insurance and home ownership so that in case of adverse economic conditions he and his family may not suffer. Therefore, the investment process begins...........

1.1.3   Process of Investment : The investment process begins with "the proper

identification of goals and objectives. A clear definition of goals and objectives is a pre-requisite for getting a viable investment plan."

The investors are primarily interested in selling a security at a price higher than the purchase price. They are also interested in dividend (return on shares) and interest income (return on bonds, etc.) till its sale.

In the end, the investor hopes to earn more amount of money than in a savings account.

However, in seeking these returns there are chances that his actual returns fall short of his expectations. This becomes his risk. Risk means uncertainty in probability distribution of returns or the extent to which actual return is likely to differ from predicted return. The source of such bad luck can be failure of dividends (interest) and for security's price to rise.

The Risk taking capacity is loss bearing capacity varies from individual to individual. The amount of risk which a person can assume in pursuance of his objectives is an important factor in the process of investment.

Analysing each Security for its risk and return characteristics is the next important step in the investment process. A Security implies a claim on an asset and the future cash inflows associated with it. It is generally in the form of a document which testifies the rights of an investor. In the context of investments, we usually think of securities as stocks or bonds. However, the term 'security' encompasses a much wider claim on assets. For example, A note given as acknowledgement when you borrow money to buy a refrigerator is also a security. Basic valuation principles can be applied to real estate as well as to major corporations. The techniques for security analysis can be used by banks, credit analysis as well as by professional technical analyst. Security analysis refers to a process of forecasting future cash inflows to the owner of a security and the risk associated with these cash inflows. An investor invests in a security in anticipation of a reward signified by either capital appreciation or cash inflows. This reward in known as return. But in seeking rewards, every investor faces the unpleasant possibility that his anticipated return will fall short of his expectations. This uncertainty is called risk.

The risk and return characteristics of individual securities serve as inputs in the construction of optimum portfolios, which is the next important step in the investment process. Security analysis is the estimates of risk and return for individual, securities which facilitates the formation of such portfolios that provide maximum return for a given risk level. Portfolios mean a combination of assets. While talking of investments, a portfolio means a combination of securities. The return of a portfolio is the weighted average of the returns of individual securities. The risk of a portfolio is slightly more

complicated. A combination of securities may have a greater or lesser risk than the sum of their component risks, which depends on the degree to which the return from individual securities move together.

As a conclusion to the investment process, an investor must review the performance of the portfolio, so as to find out whether the goals and objectives have been met in whether the return is adequate as per the risks undertaken by the investor. Such a review may also point out towards improvements in the techniques of security analysis and portfolio formation.

1.1.4 Rate of Return and Risk :

An individual generally prefers current consumption to future consumption. Only the prospect of enjoying more wealth in future would act as an incentive for postponing current consumption. This is known as the time preference for money. It means that all the other things being constant, an individual will do away with present consumption in favour of future consumption only in anticipation of higher returns. Thus, in order to lure a person to invest Rs. 100, for a period of one year, it is necessary that he gets some reward, say 5%, so that his wealth is Rs. 105 at the end of one year.

However, this reward or return gets moderated or reduced by the rate of inflation and risk. If the price level also goes up by 5% in the period of twelve months, the purchasing power of money will go down by the same level as the increase in wealth and the nominal return to an investor will not be more than his current consumption opportunities, Thus, the rate of return for such an investment would be zero. An investor would add the rate of inflation of the real rate of return in order to make an investment viable.

Thus,

Real Rate of Return= Nominal rate-inflation rate.

Another important matter, to which an investor must pay attention, is that of risk which refers to the uncertainty or variability of future returns associated with an investment. If the level of certainty is low, an investor would require a higher return for such an investment. This additional return for covering the element of risk is called risk-premium.

Therefore,

Required return = Real rate of Return (Risk free) + Expected Inflation + Risk Premium

Thus, In the analysis of return and risk, the investor has to trade off between a desirable degree of risk and expected level of return. We can conclude that there should be a risk-return trade off in the securities markets, with higher risk assets priced to offer higher expected returns and vice-versa.

1.1.5 Features of an Investment Programme or Investment Constraints Considering:

I. Risk : The risk depends upon the following factors :

(a) The longer the maturity period, the larger is the risk.

(b) The more the credit worthiness of the borrower or agency using securities, the less is the risk thus, the risk of loss of interest and principal is less with the Govt. or semi-Govt. bodies than private corporate units.

(c) The nature of investment, viz. the debt instrument or fixed deposit or ownership instrument like equity or perpetual share, also determines risk. The risk of loss of money is less is the case of debt instruments like debentures, as these are secured and fixed interest is payable on then. In the case of ownership instruments, equity is more risky than preference shares or other forms of ownership instruments such as party or fully convertible debentures, convertible and cunulative preference the shares as equity holders are residual owners of the firm.

(d) The risk of variability of returns is more in the case of ownership capital as the return varies with the net profits afterall commitments are met. As such, equity and preference shares of companies are more risky than debentures and bonds.

(e) The nature of tax liability on the instruments- tax provisions would influence the return as the net effective return for a tax-payer would be higher for tax free instruments.

(f) An investment program is built upon a person's ability to take risk which pose a constraint on investment program.

II. Return : A major factor influencing the pattern of investment is its return, which is the yield plus capital appreciation if any. The difference between the purchase price and sale price is capital appreciation and yield is the interest or dividend divided by its purchase price. After recognising risk tolerance level, the portfolio is framed that maximises return at that level of risk tolerance.

III. Safety : The safety of capital is the certainty of return on capital without loss of money or time involved. If safety of capital is to be assured, then riskless return as in the case of Govt. bonds is to be chosen.

IV. Liquidity : If a capital asset is easily realisable, saleable or marketable, then it is said to be liquid. If an investment can be encashed with a time lag as in case of equity shares or with loss of money as in case of bank fixed deposits, then they are less liquid.

For highly liquid investors, the fund should be invested in exceptionally, high-quality, short maturity debt such as money-market fund or Treasury bills, Commercial paper, Certificates of deposit and banker's acceptances.

(V)   Time horizon : Individuals investment planning also depends upon their life stages. Individuals who are early in their life cycle have a long horizon, can absorb more ups & downs and hence, make risky investments.

Later in life, individuals have a much shorter horizon and should therefore select less volatile portfolio.

1.1.6   Types of Investment :

Investment could be broadly classified into; (i) real investment and (ii) financial investment. A real investment covers all real asset like buildings, vehicles, furniture, etc. They are all materials, tangible objects. In contrast, financial investment deals with financial assets which are nothing but documents signifying indirect claims to real assets belonging to someone else eg: Shares, debentures etc.

Liquidity of a mode of investment is an important characteristic which distinguishes real investment from a financial investment. The term 'liquidity' implies the convenience, ease, speed and cost of converting an asset into money. It is quite natural for a real asset to be less liquid than a financial asset, because real assets are more heterogeneous, have specific applications and are beneficial in combination with other factors of production. Further, real assets enjoy a lesser marketability than financial assets.

I. Types of Securities

In the context of financial investments, securities can be grouped into four broad categories, viz; (i) Bonds and debentures, (ii) Equity shares, (iii) Preference shares and (iv) Derived Securities.

Bonds/Debentures have a fixed maturity and bond-holders are entitled to a fixed interest payment each year, regardless of what the income of the firm may be during the period. In addition, bond-holders enjoy a preferential claim on the firm's assets in case the firm goes in for liquidation.

Equity or Common Shares, on the other hand, are perpetual. They continue to exist for the entire time span of a firm. The holders have a residual claim against the income and assets of the firm. The chances of gain are greater for the holders of equity shares. However since equity shareholders have the last claim on the firm's income and assets, the risk involve is also greater for equity owners.

Preference shares are generally referred to as hybrid securities because they incorporate the characteristics of both bonds and common shares to a certain extant. The claims of holders of preference shares are limited on the firm's income as well as assets. On the other hand, the preference shares constitute a permanent liabilities of the firm.

Financial assets like, options, convertible bonds, futures, etc. are called securities. They are so-called because a part of their value is derived from the value of another security. For example, the value of a call option is derived from the value of common stock against which the call option is written.

1.1.7 PRINCIPLES OF INVESTMENT—RISK AND RETURN

The value of a firm is affected by two factors : Risk and Return.

Higher the risk, other things being equal, lower the value; higher the return, other things being equal, higher the value. So, a finance manager needs an explicit and quantitative understanding of these concepts, and more important, the nature of relationship between them. These are divided into three sections :

— Risk and Return Concept.

— Risk in a Portfolio Context.

— Relationship between risk and return.

Modern investment theory is built upon estimating risk and return characteristics of securities and portfolio to determine (1) what securities to hold, and (2) how many rupees should be allocated to each.

1.1.7.1 Risk and Return Concept

As discussed earlier, Risk and return may be defined in relation to a single investment or a portfolio of investments. We will first look at risk and return of a single investment held in isolation and then discuss risk and return of a portfolio of investments. Thus to understand the concept of risk if it is necessary to know what is return.

I. Return : The return from an investment is the realisable cash flow earned by its owner during a given period of time. Typically, it is expressed in percentage. The importance of return in any investment decision can be described as follows :

    (a)   It enables the investors to compare returns of alternative investments.

    (b)   It helps to analyse how well the security has performed in the past.

    (c)   Study of historical returns help in projecting the future trend.

There are two types of returns :

7. Realised or Historical return.

2. Expected return.

Realised or historical return is that had been earned in past.

Expected return is the return from an asset that investors anticipate or expect to earn over some future period. The expected return is subject to the uncertainty or risk. It may or may not materialse on expected level.

Return is basically made up of two components :

— The periodic cash receipts or income on the investment in the form

of interest, dividend etc. The term yield is often used in connection with this component of return.

— The appreciation (depreciation) in the price of the asset is referred to as capital gain (loss).

II. Measuring the Rate of Return

The rate of return is the total return the investor receives during the holding period stated as a percentage of the purchase price of the investment at the beginning of the holding period.

The general equation for calculating the rate of return is as :

$$\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$$

Where K is the rate of return (Which is to be calculated)

P_t = Price of the security at time 't' i.e. at the end of the period.

P_t = 1 = Price of the security at time t-1 i.e. at the time of the beginning of the holding period.

D_t = Income or cash flows receivable from the security at time 't'.

Rates of return are usually stated as an annual percentage ratio to allow comparison of returns of securities.

III. Probabilities and Rate of Return

(I)   A probability describes the chance of occurrence of an event. Similarly, probabilities are drawn for occurrence of different rates of return say 50% chance of having 10% return. 30% chance of having 8% return and so on. In such a case the expected return for any asset is the weighted average of return using probability as weight. Mathematically, this can be stated as follows :

K = Σ PiKi

Where K = expected rate of return.

Pi = Probability associated with its possible outcome.

Ki = Rate of return from the its possible outcome.

n = number of possible outcomes.

IV. Risk

Risk and return go hand in hand in investment and finance. One can not talk about return without taking into consideration the risk. Generally the higher the risk, the higher the return. Investment decisions, therefore, require the investor to have a trade off between risk & return. i.e. if the investor does not want to bear high risk then he cannot expect high returns. In the some manner, accepting the high degree of risk may

yield higher-returns but their is no gurante of 'Profits' all the time, in all the cases. That is why there remains element of high risk. Risk in simple terms is the chance that the actual outcome from an investment may differ from the expected return.

Say, if the expected return is 10% and there is a chance that it may fall to 8% or may rise to 12%, this variation of 2% upside or/and downside becomes its risk. The higher the variation, the larger the risk.

V. Risk and Expected Rate of Return

The width of a probability distribution of rates of return is a measure of risk. The wider the probability distribution the greater the risk or greater the variability of return or the greater is the variance.

VI. Sources of Risk

Some of the sources of risk are :

(a)   Interest Rate Risk : Interest rate is the variability in a security's return resulting from changes in the level of interest rates. Other things being equal, security prices move inversely to interest rates. This risk affects bond-holders more directly than equity investors. To understand this concept, let us say, if interest rate of bank deposits risk, what will happen. People would simply take away their money from risky stock market & put in risk use bank deposit. Hence the inverse relationship of effects.

(b)   Market Risk : Market risk refers to the variability of return due to fluctuations in the securities market in general all alike systematic risk. This risk includes a wide range of factors affecting securities, on a broad front like depressions, wars, politics, fashions etc.

(c)   Inflation Risk : With rise in inflation, there is reduction of purchasing power, hence this is also referred to as purchasing power risk and affects all securities. This risk is also directly related to interest rate risk as interest rates go up with inflation.

(d)   Business Risk : This refers to the risk of doing business in a particular industry or environment and it gets transferred to the investors who invest in the company or business.

(e)   Financial Risk : Financial risk arises when companies known as unsystematic risk uses debt financing. The more the company resorts to debt financing, the greater is the financial risk.

(f)   Liquidity Risk : This risk is associated with the secondary market in which the particular security is traded. A security which can be bought or sold quickly without significant price concession in value loss is considered liquid. The greater the uncertainty about the time element and price concession, the greater is the liquidity risk. Securities which have ready markets like treasury bills have

lesser liquidity risk.

VII.   Measurement of Total Risk

Risk is associated with the dispersion in the likely outcomes. Dispersion refers to variability. If an assets return has no variability, it has no risk. There are different ways of measuring risk (variability of return). They range from the highest possible rate of return to the lowest possible rate of return, but the range is based on only two extreme values.

$$\sigma = \Sigma \quad P_i \, (K_i - K)$$
$$2$$

A more sophisticated measure of risk employed commonly in finance is standard deviation. The Standard deviation of a variable is calculated using the following formula :

Where σ = Standard deviation.

Pi = Probability associated with the occurrence of i the rate of return.

Ki = i the possible rate of return.

K = Expected rate or return.

n = number of possible outcomes.

The other way of measuring risk is variance. The variance of an asset rate of return can be found as the sum of the products of the squared deviations of each possible rate of return, from the expected rate of return multiplied by the probability that the rate of return occurs.

Mathematically, this is the square of S.D. σ^2

1.1.8   Summary:

The phrase "investment" refers to a financial commitment undertaken with the hope of earning a profit. For the layperson, it involves saving money and delaying spending in order to generate more revenue. Each person has a different capability for risk taking and loss acceptance. An important aspect of the investment process is the level of risk that a person can take on while pursuing their goals. The chapter focuses on Investment and the measurement of risk and return aspect of it.

1.1.9   Key words :

Investment : Commitment of funds in expectation of some positive rate of return in future.

Return : Yield on investment is sum of interest/dividend income and price appreciation.

Expected Return : It is sum of returns multiplied by its probability of happening.

Risk : It is the possibility that realized or actual return is less than the expected return.

Systematic risk or non diversifiable risk : It is the risk external to an industry and/or business and is due to broad forces such as war, inflation etc. which affects all the businesses.

Unsystematic risk or diversifiable risk : It is the risk arising out of the uncertainly surrounding a particular form or industry due to factors like labour strike, management policy etc.

Portfolio : It is bunch or collection of securities.

1.1.10 Self Check Exercise

1. Of those risks normally associated with holding securities, what are the systematic risks associated. Explain.

2. Define Return and explain its relationship with risk.

3. What are the various ways of measuring Risk?

1.1.11 Short Questions

1. What is Investment?

2. Explain Portfolio.

1.1.12 REFERENCES

1. Chandra Prasanna, *Financial Management,* Third edition, Tata Mc Graw Hill Publishing Company Ltd.

2. Fischer, D.E., and Jordan R.J., *Security Analysis and Portfolio Management,* Fifth Edition, Prentice Hall of India.

3. V.A. Awadhani : Investment Management

4. Preeti Singh : Investment Management.

Lesson No. 1.2   Author : Dr. J.S. pasricha

Valuation of bonds and Equity Shares

Structure :

1.2.0 Objectives

Dear students, the objective of this chapter is to teach you various methods

of valuation of debentures, preference shares and equity shares. Different concepts of value are also explained in this chapter before giving various valuation models. Debentures, preference shares and Bonds can be valued on the basis of present value, maturity period, interest flows or returns. Equity shares can be valued according to present value, dividend capitalisation, return growth rate, price earning ratio etc.

1.2.1 Introduction

All Classes of investors would be interested in knowing the value of securities they plan to hold for periods ranging from short to infinity. Since the securities investor belongs to a special class of general buyers-and-sellers, he would be influenced in his decisions to buy/sell by two sets of values : one, his own value, the value externally determined by the market and known as 'price'. These are the determinants of the buy-sell- decision of any goods or services in general. It is important to emphasis that 'risk' and 'return' do vitally affect the valuation process both of the individual investor and the whole constellation of investors that constitute the market.

Valuation is thus a key concept for investment decisions. No buy / sell action will emerge without 'values'.

1.2.2 Concepts of Value

There are many concepts of value, used for different purposes, which are explained below :

1.2.2.1 Book Value

Book Value is an accounting concept. Assets are recorded at historical cost, and they are depreciated over years. Book value may include intangible assets at acquisition cost minus amortised value. The book value of debt is stated at the outstanding amount. The difference between the book values of assets and liabilities is equal to shareholders funds or net worth. Book value per share is determined as net worth divided by the number of shares outstanding. Thus, book value reflects historical cost, rather than value. Value is what an asset is worth today in terms of its potential benefits.

1.2.2.2 Replacement Value

Replacement value is the amount that a company would be required to spend if it were to replace its existing assets in the current condition. However, it is difficult to find cost of assets currently being used by the company. Replacement value is also likely to ignore the benefits of intangibles and the utility of existing assets.

1.2.2.3 Liquidation Value

Liquidation value is the amount that a company could realize if it sold its assets after having terminated its business. It would not include the value of intangibles since

the operations of the company are assumed to cease. Liquidation value is generally a minimum value a company might accept if it sold its business.

1.2.2.4 Going Concern Value

The concept of 'going concern' states that the business has not been started for a short period of time rather it will be a 'going concern' in the distant future as well. Here, the going concern value refers to the monetary value it can realise if it is sold being operational or going-concern.

Going concern value is the amount a company could realise if it sold its business as an operating business. Going concern value would always be higher than the liquidation value, the difference being value of intangibles like goodwill.

1.2.2.5 Market Value

Market value of an asset or security is the current price at which the asset or the security is being sold or bought in the market. Market value per share is expected to be higher than the book value per share for profitable growing firms. A number of factors influence the market value per share, and therefore, it shows wide fluctuations. What is important is the long term trend in the market value per share. In ideal situation, where the capital markets are efficient, market value of share should be equal to present (or intrinsic) value of a share.

1.2.3 Basic Valuation Model

Value of a security is a fundamental variable and depends on its promised return, risk, and the discount rate. In fact, the basic valuation model is none else than the present value procedure. Given a risk adjusted discount rate and the future expected earnings flow of a security in the form of interest, dividend, earnings, or cash flow, you can determine the present value as follows :

$$PV = \frac{CF_1}{(1+r)} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + ... + \frac{CF_n}{(1+r)^n}$$

where PV   =   present value

CF   =   Cash inflow (interest, dividend, or earnings)per time period 'n' number of periods.

r   =   risk - adjusted discount rate (generally the interest rate)

1.2.4 Present Value of Bonds / Debentures

A bond or debenture is a long-term debt instrument. Bonds issued by the government or the public sector companies in India are generally unsecured. The Private sector

companies issue secured or unsecured debentures. A bond or debenture carries fixed rate of interest known to investors and is redeemable after a specified period. If there is no risk of default, then there is no difficulty in estimating the cash flows associated with a bond. The expected cash flows consist of annual interest payments plus repayment of principal.

1.2.5   Bond with a Maturity Period

A bond or debenture may be issued for a specified period of time. When a bond or debenture has a finite maturity, we shall consider annual interest payments plus its terminal, or maturity value for the determining its present value. Using the present value concept, the discounted value of these flows will be calculated. By Comparing the present value of a bond with its current market value, it can be determined whether the bond is overvalued or undervalued.

$$Po = \frac{I_1}{(1+r)^1} + \frac{I_2}{(1+r)^2} + \frac{I_3}{(1+r)^3} + \ldots\ldots\ldots\ldots + \frac{I_n\,Pn}{(1+r)^n}$$

Where,   Po   =   present value of a bond / debenture

                    I   =   amount of interest in period t = INT

                    R   =   required rate of return on bond

                    P   =   maturity value of bond in period n

                    N   =   number of years to maturity.

In practice, it is quite common to pay interest on bonds / debentures semi-annually. The formula for bond valuation can be modified in terms of half-yearly interest payments and compounding periods as given below :

$$Po = \sum_{n=1}^{2n} \frac{\frac{1}{2}(INT)}{(1+ r/2)^n} + \frac{Pn}{(1+ r/2)^{2n}}$$

        When N = Total number of years

1.2.6   Perpetual Bonds

Bonds which will never mature are known as perpetual bonds. Perpetual bonds or debentures are rarely found in practice. In case of the perpetual bonds, as there is no maturity, or terminal value, the value of the bonds would simply be discounted value of the infinite stream of interest flows.

$$P = \frac{Int}{1+k}$$

1.2.7   Estimating Returns on Bonds / debentures

Several measures of returns on bonds are available. They are : the coupon rate, the

current yield, and the yield to maturity. The coupon rate is specified at the time of issue and is all too obvious. The other two measures can be discussed. Current Yield : This is stated as follows :

$$Current\ yield = \frac{Stated\ (Coupon)\ \mathrm{int}erest\ per\ year}{Current\ market\ price}$$

Current yield is a superior measure to coupon rate because it is based on the current market price. However, it does not account for the difference between the purchase price of the bond/ debenture and its maturity value.

Yield - to - maturity (YTM) : This is the most widely used measure of return on fixed income securities. It may be defined as the indicated (promised) compounded rate of return an investor will receive from a bond purchased at the market price and held to maturity. Computing YTM involves equating the current market price of a bond with the discounted value of future interest payments and the terminal principal repayment ; thus YTM equates the two values, viz., the market price and the present value of future payments including the principal repayment.

1.2.8   Present Value of Equity Shares

The valuation of equity shares is relatively more difficult. The difficulty arises because of two factors : First, the rate of dividend on equity shares is not known and secondly, the payment of equity dividend is discretionary. Thus, the estimates of the amount and the timing of the cash flows expected by equity shareholders are more uncertain. In the case of debentures and preference shares, the rate of interest and dividend respectively are known with certainty. It is, therefore, easy to make the forecasts of cash flows associated with them. Second, the earnings and dividends on equity shares are generally expected to grow, unlike the interest on bonds and preference dividend. This feature of variable dividend on equity shares makes the calculation of share value difficult.

1.2.9   Dividend Capitalisation

This method is based on the concept of dividend payments. The general principle of valuation applies to the share valuation. The value of a share today is a function of cash inflows expected by investors and risk associated with those cash inflows. Cash inflows expected from an equity share will consist of dividends expected to be received by the owner while holding the share and the price which he expects to obtain when the share is sold.

$$V = \frac{D}{K}$$

V = Value of Firm

D = Dividend payments

1.2.10 Single Period Valuation

When an investor intends to buy a share and will hold it for one year. He expects the share to pay a dividend of Rs. 2 next year, and would sell the share at an expected price of Rs. 21 at the end of the year. If the investor required rate of return (K) is 15 per cent, how much should he pay for the share today? The value of share today, P, will be determined as the present value of the expected dividend per share at the end of the first year, DIV, plus the present value of the expected price of the share after a year (P). Thus,

$$P = \frac{DIV + P}{1 + K} \qquad\qquad (ii)$$

An investor can, thus, represent this expectation with regard to future share price in terms of expected growth. If the share price is expected to grow at g percent, then we can write P as follows :

$$P = P (1+ g)$$

And rewrite Equation (i) as

$$P = \frac{DIV + P (1+ g)}{1 + K}$$

Simplifying Equation (7), we obtain :

$$P = \frac{DIV}{K - g}$$

In other words, the present value of share is determined by its expected dividend by the difference of the shareholders capitalization, or required, rate of return (K) and growth rate (g) in share value.

1.2.11   Constant Growth Model

This model is also based on the concept of Dividend Payments. In this model, the basic assumption is that dividends will grow at the same rate (g) into an indefinite future.

$$P = \frac{D_0 (1+g)}{(1+r)^1} + \frac{D_0 (1+g)2}{(1+r)^2} + \frac{D_0 (1+g)3}{(1+r)^3} + \ldots\ldots\ldots \frac{D_0 (1+g) 4}{(1+r)^n}$$

When the period approaches to infinity the equation takes the form P = D / r-g

Where, P   =   present value of the stock

r   =   required rate of return

g   =   the growth rate

D   =   the next year dividend

This model is based on the following assumptions :

a)   The firm's dividend policy will be stable

b)   The firm will earn a stable return over the time

This model is applicable when the analyst is able to predict all the three variables in the equation, namely, next year's dividend, the firm's long-term growth rate and the required rate of return of the investor.

Once the three values are known to the analyst, the present value of the stock can be computed and compared with the prevailing price.

If   P value > Actual value = buy P

value < Actual value = sell

Example :

The company ABC's next year dividend per share is expected to be Rs. 3.50. The dividend in subsequent years is expected to grow at the rate of 10 per cent per year. If the required rate of return is 15 per cent per year, What should be its price? The prevailing market price is Rs. 75.

Solution :

P = D / r-g

D = 3.50

r = 0.15

g = 0.10

$$P = \frac{3.50}{0.15 - 0.10}$$

= 3.50 / 0.5

= Rs. 70

The investor would be willing to pay Rs. 70 for the share. Since the theoretical price is less than the market price, the investor is advised not to buy.

1.2.12   Two Stage Growth Model

The constant growth model can be extended to two stage growth model Here, the growth stages are divided into two, namely, a period (or decline) and a constant growth period of infinite nature. The extra - ordinary growth period will continue for some period followed by the constant growth rate eg the information technology industry is at present experiencing an extraordinary growth rate, it may continue for sometime and afterwards it may maintain growth rate :

$$Po = \sum_{t=1}^{N} \frac{Do\,(1+gs)\,t}{(1+rs)\,t} + \frac{DN+1}{(rs-gn)} * \frac{1}{(1+rs)\,N}$$

D	=	dividend of the previous period
g	=	above normal growth rate
g	=	normal growth rate
r	=	required rate of return
N	=	period of above - normal growth

1.2.13 Valuation through P/E Ratio

Price - earning ratios are used to estimate the value of the stocks by the investors rather than adopting the discounting models. Every financial magazine and the newspaper at regular interval publishes price earnings per share. The P/E ratio models have three distinct advantages over the discounting models :

1.   P/E ratio represents price per rupee of share earnings. This would help to compare the prices of stocks, which have different earnings per share.

2.   P/E ratios are helpful in analysing the stocks of the companies that do not pay dividend but have earnings. It should be noted that when there a loss, the P/E ratio analysis is difficult to use.

3.   The variable used in P/E ratio models are easier to estimate than the variables in the discounting model.

With the P/E ratio models the investor can only find the relative positions of the different stocks. It does not indicate what price is appropriate for a particular stock. For example from the P/E ratio, the analyst can state that P/E ratio of kinetic Honda 27.5 (18.10.98) is higher than that of Bajaj Auto - (17.2) and T.V.S. Suzuki Ltd. - (18.1).

Concept : The conceptual framework of the P/E ratio arises from the constant growth model. The constant growth model can be easily written in price - earnings model.

$$P = d \,/\, r\text{-}g$$

Dividing both the sides with E,

$$P/E = \frac{d/e}{r-g}$$

d/e is the pay out ratio. Now the P/E ratio is the function of the payout ratio, the discount rate and the growth rate. The factors involved in the formula indicate that higher the payout ratio, higher the price earning multiples, keeping other things i.e.

r and g constant. If the growth rate is high, then also the P/E ratio would be high. If the discount rate or the required rate of return is high the value of the P/E ratio would be low and vice-versa.

If the growth rate is taken to be dependent on the return on equity (ROE), then

g   =   ROE (1- d/e) ; d/ e - payout ratio then

P   =   d$d//e$r-g can be written as :

$$P/E = \frac{d/e}{r - ROE\ (1 - d/e)}$$

Thus P/E ratio depends on the dividend payout, discount rate and return on equity. All these factors effect the price earning multiples.

1.2.14   Summary

In this chapter we have learnt about the valuation of debentures, preference and equity shares. We studied the concepts of value, valuation models of debentures, bonds preference shares and equity shares i.e. basic valuation model, present value of bonds/ debentures, bonds with a maturity period, perpetual bonds, estimating returns on bonds, valuation of preference shares, present value of equity shares, dividend capitalisation single period valuation, constant growth model, two stage growth model and valuation through P/E ratio. We can use these models according to their applicability in the situation.

1.2.15   Glossary

1.   Value - It is what an asset is worth today in terms of its potential benefits.

2.   Intrinsic Value is the true value of the share, which depends on its earning capacity and its true value.

3.   P/E multiplier - the times P (Price) is higher than the earning per share.

1.2.16   Self Check Exercise:

1.   What are Prepetual Bonds?

2.   Explain P/E Ratio.

3.   What is dividend capitalization?

1.2.17   Exercise Questions

Long Questions

1.   Discuss various valuation models which can be used to evaluate bonds, debentures.

2.   Discuss various valuation models which can be used to evaluate equity shares.

Short Questions

3.   Write notes :

(i)   Concepts of value

(ii)   Market value Vs intrinsic value

(iii)   P/E Ratio model

(iv)   Dividend Capitalisation

   (*v*) Perpetual Bonds

1.2.18   Suggested Readings

(i)   Securities Analysis and Portfolio Management

By Fisher & Jordon

(ii)   Securities Analysis and Portfolio Management

By V.A. Avadhani

(iii)   Investment Management

By Preety Singh

(iv)   Investment Management

By V.K. Bhalla

(v)   Financial Management

By Prassana Chandra

FUNDAMENTAL ANALYSIS

Index

1.3.1 Objective

The objective of this chapter is to study fundamental analysis, It is basically concerned with the economic, industry and company study. All th e factors are elaborated in detail in this chapter.

1.3.2 Introduction

The chapter focuses on fundamental analysis. Fundamental analysis is a method of finding out the future price of a stock which an investor wishes to buy. The method of forecasting future behaviour of investments and their rate of returns requires a clear understanding of broad economic forces in which they operate, the kind of industry, they belong to and the analysis of internal working of company.

Hence, the EIC study is economic, industry and company study or top down approach.

The fundamental analysis is basically concerned with EIC study namely, economic, industry and company study. These factors are taken into consideration while calculating the intrinsic value. These factors are discussed in detail in the following

paragraphs.

Table-A

```
┌─────────────────────────────────────┐
│     Genesis of Industrial Project    │
└─────────────────────────────────────┘
                   ↓
        ┌─────────────────────┐
        │  Conceive the Project│
        └─────────────────────┘
                   ↓
       ┌──────────────────────────┐
       │  Prepare a Project Report │
       └──────────────────────────┘
                   ↓
```

Technical Feasibility Report	Market Report	Financial Feasibility Report	Location

```
         ↓                    ↓              ↓
┌──────────────────┐   ┌──────────────────────────────┐
│  Input Mix       │   │   Financial Structure         │
│  & Output Mix    │   │   Sources & Uses              │
└──────────────────┘   └──────────────────────────────┘
                                    ↓
                    ┌──────────────────────────────────┐
                    │  Financial Viability of Project    │
                    └──────────────────────────────────┘
```

Merchant Banking

Coordination	Approach to FIIs & Banks Support	Approaches the Govt. for licences	Approach to Stock exchanges

```
         ↓                    ↓              ↓                ↓
```

Coordination with Registrars Printers & bankers	Collaboration agreement	Capital goods import	FEMA Clearance

1.3.3   Economy Analysis

It is important to predict the changes in national economy because economic activity affects corporate profits, investor's attitudes, expectations and ultimately the security prices. An outlook of sagging economic growth can lead to lower corporate profits, a prospect that can engender investor pessimism and lower security price. The key for an analyst is that overall economic activity manifests itself in the behaviour of stocks. For any investor, the anticipated economic environment and therefore the economic forecast is important for making decisions concerning both the timing of an investment and the relative investment desirability among the various industries in the economy. There are certain major economic forecasting techniques such as :

   (i)   Anticipated Surveys

   (ii)   Indicator / Barometric Approach

   (iii)   Diffusion Index

   (iv)   Economic Models

   (v)   Opportunistic Models

Common to all forecasting techniques is an understanding of the national income and product accounts which summaries both the receipts and the expenditure of all segments of the economy whether government, business or personal. The total of final expenditure must equal the total of receipts in the economy.

   The economic tools of Indian economy are :

   (i)   Gross National Product :

            GNP = GNI = GNE

            Gross National Product consists of :

            (a)   Foreign Sector Earnings

            (b)   Capital Investment

            (c)   Household Sector

            (d)   Agricultural Sector

   (ii)   Net National Product

   (iii)   Gross Domestic Product

   (iv)   Disposable Income

   (v)   Transfer Payments

   The above factors of economy determine the economic activity for an investor.

1.3.4 Industry Analysis

For an analyst, industry analysis demands insight into (a) the key sectors or sub-

divisions of overall economic activity that influence particular industries and (b) the relative strength or weakness of particular industry or other groupings under specific sets of assumptions about economic activity.

1.3.4.1 Classification of Industries :

Webster's Dictionary defines an industry as a group of productive or profits making enterprises or organisations that have a similar technological structure of production and that produce or supply technically substitutable goods, services or sources of income.

Industries are broadly classified into the following categories :

> 1.3.4.1.1   Industry classification by product.
>
> 1.3.4.1.2   Industry classification according to Business Cycle.
>
> 1.3.4.1.3   Industry classification according to process.

1.3.4.2 Industry Classification by Product :

It is not easy to pinpoint as industry and the investigator needs to have clear goal in mind so that he can properly classify firms into industries for his specific purpose e.g. if the goal were to reach an estimate of a state for the industry, the analyst might want to consider similar products and products that could be substituted for the item in question. Industry classification does not present any acute problem for an expert analyst when he is classifying firms with basically one product or a homogeneous group of products The problem arises when he deals with a firm that has a diversified product line.

1.3.4.3 Industry Classification according to Business Cycle :

This classification is based on how the industries react to upswings and downswings in the economy. The industries according to this classification are grouped into :

(a)   **Growth Industries** : Includes those industries that are often independent of the business cycle.

(b)   **Cyclical Industries** : Such industries usually thrive during a period of economic prosperity and suffer in the period of economic recession.

(c)   **Defensive Industries** : There are certain firms whose securities are held for income by the investor. Such firms constitute the defensive industry. Secondly such industries produce items of necessity. The earnings of the firms in this industry might expand even in the time when the earnings of cyclical firms are declining. Therefore, this industry may be considered counter cyclical.

1.3.4.4 Industry Classification According to Process :

If an analyst desires to compute costs of the industry, it make sense to consider only those firms which have identical process e.g. an analyst can compare the cost of one television producer with the other but not with that of a manufacture of oil products.

1.3.5 Important factors of Industrial Growth

The characteristics, of industrial growth begins with certain important factors :

(1)   Technology : Technology keeps on changing for e.g. : Fountain pens have given way to ball pens. CRT TVS have given way to LCD TVS. A product with frequent technological changes may be useful for the investor as product obsolescence may erode his investment.

(2)   Competition : The second factor which an investor must consider in making an industrial analysis is to enquire about the type of competition that an industry faces in the country.

(3)   Economic Environment : Poverty in a country would have an economic climate where cheaper products would be sold and demand for these products will be higher. Economically advanced country will have customer activity in higher place and better quality products.

1.3.5.1 Stages in Industry Life Cycle :

The industry life cycle characterised by three stages :

    1.3.5.1.1 The Pioneering Stage

    1.3.5.1.2 The expansion Stage

    1.3.5.1.3 The Stagnation Stage

The Pioneering Stage : This stage is characterised by rapid growth in demand for the output of the industry. It is earliest stage in which demand grows an increasing rate. Production rises and the profits are also very high at this stage. Tempted by profits many new firms enter the field making the market competitive. All firms compete with each other but most of them are wiped out in this stage and only a few efficient firms are left in the industry.

The Expansion Stage : The firms that survive from the pioneering stage enter in the expansion stage. Their competition in the expansions stage bring about improved products at a lower price. The firms continue to expand but their rate of growth becomes moderate as compared to the pioneering state. The investors find it the best time to make an investment. At this time the firms begin to expand themselves through external means of financing such as loans, public issue of shares etc. and through internally generated funds. The expansion stage is the period of safety and security and is also called period of maturity for the firm.

The Stagnation Stage : In this stage the sales increase but at a decreasing rate. The transition from the maturity to the stagnation stage is very gradual, therefore it fails to get into the notice The few that survive change their course or action and start a new venture. In this stage the investors should make continuous evaluation of their investments.

Techniques for Evaluating Relevant Industry Factors

(i)   End-use and Regression Analysis : End-use analysis or product-demand

analysis, refers to the process whereby the analyst or investor attempts to diagnose the factors that determine the demand for the output of the industry. A simple linear regression analysis mathematically or investor attempts to diagnose the factors that determine the demand for the output of the industry. A simple linear regression analysis mathematically fits at line to a series of points on a scatter diagram and co- relation analysis permits us to mention the 'goodness of the fit'.

(ii)   Input-Output Analysis : The input-output analysis reflects the flow of goods and services through the economy and observes patterns of consumption at all stage.

1.3.6 Company Study

Price Formation

The table B shows the market trading comprising the speculative & investment in security markets.

Table B
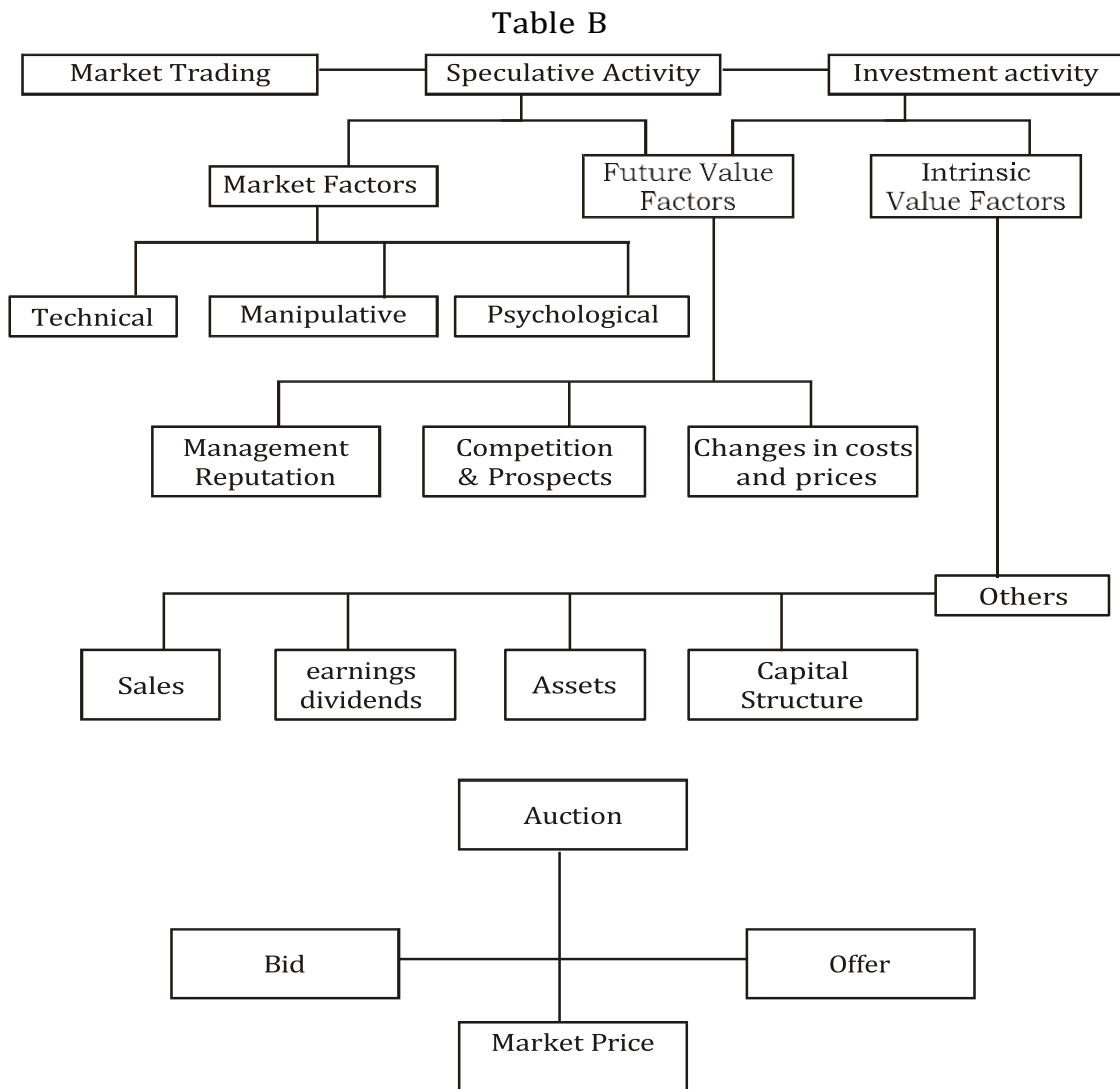
Information regarding the company can be obtained internally or externally. The internal sources of information include primarily the financial statements. In addition auditor's opinion, published financial forecast and officially filed information can be made use of. During the course of evaluation of financial statements, proper attention must be paid to assertion whether the financial statements, are correct, complete, consistent and comparable. The financial statements can be treated as accurate if they are certified by a qualified chartered accountant. The degree of completeness of financial statements is rather hard to find out. However, those financial statements which account for as many changes as possible should be considered as good statements. Comparability of financial statements means that the information provided by them should be comparable over a period of time and with other firms also. Comparability would be possible only if consistency is maintained in the preparation of accounts. Specific attention in this regard has to be given to the policies regarding valuation of inventories, choice of depreciation method, treatment of intangibles, creation of provisions and reserves and tax-planning. The external sources of information regarding a company include information from investment service agencies, brokerage firms, published statements of other companies, financial dailies like Economic Times, Financial Express, Economic and Political Weekly, Business World, Business India, Investment Today etc. Directories like Stock Exchange Directory, Directory of Industries, Times of India Directory etc.

"Company analysis is broadly related with measuring earnings, forecasting earnings and valuation of shares."

Earnings of a company can be measured by collecting and analysing the information from internal and external sources as explained above. One of the popular means of ascertaining the earning capacity of a firm is the earnings per share ratio which can be expressed as :

$$EPS = \frac{Earnings\ After\ Tax}{No.\ of\ Outs\tan ding\ paid-up\ shares}$$

This is a useful approach for making the analysis of the effects of and the interaction between a firm's returns on its assets and the manner in which they are financed. Market Share / Profit Margin Approach : Under this method, the industry sales and the projected share of a firm in industry's total market is taken into consideration. The analysts can calculate the profit margin by multiplying the estimated sales by the most likely profit margin. The figure of earnings thus derived is divided by the number of outstanding shares to get the earnings per share. Earnings per share can be further multiplied with the price earnings ratio to obtain the forecasted price.

Therefore, Profit Margin = Company's estimated Sale x Estimated Profit Margin

$$\frac{Earnings}{No.\ of\ shares}$$

EPS × P/E = Forecasted Price

The price at the beginning of the period is subtracted from the ending price to calculate the price change for the period. Thus, the holding period yield (HPY) can be expressed as follows :

$$HPY = \frac{Annual\ Dividend + \Pr ice\ Change}{Beginning\ \Pr ice}$$

Revenue Expense Approach : This is also known as the scientific method as it undertakes the forecasting of all the revenue and expenses to project the earnings of the firm. Simply stated.

Forecast of Earnings = Forecasted Revenues - Forecasted Expenses. therefore,

$$EPS = \frac{Forecasted\ Earnings - \Pr eference\ Dividend}{No.\ of\ Outs\tan ding\ Equity\ Shares\ in\ the\ Forecast\ Period}$$

Best estimate of price = EPS × P/E

Therefore,

$$HPY = \frac{EPS \times P/E - \Pr ice\ at\ the\ Beginning + Dividend}{Beginning\ \Pr ice}$$

HPY = Holding Period Yield

As far as valuation of the stocks is concerned, it can be done by suing traditional models built around the price earnings ratio and dividend payout ratio. These models have already been referred to in earlier chapters.

The modern techniques of valuation consists of the well-known technique of Correlation, Regression, Decision Trees, Trend Analysis, Simulation etc.

Other stock related techniques include active strategies or passive strategies.

The active strategy aims at short listing those stocks which are undervalued and then taking a contrarian stance. The popular active strategies include the growth stock approach, under-valued stock approach, small capitalisation approach and the market times approach. The passive strategy is simply a buy and hold approach to stocks.

1.3.7 Summary

This chapter presents the fundamental analyst's view about selection of securities. In order to select securities, the investor has to critically evaluate several economic factors having an influence on the company. We listed few forecasting techniques like anticipatory surveys, indicators, econometric models, and opportunistic model building. Next we observed how economic analysis should be mixed with industry analysis. Key characteristics of the industry include past sales and earnings performance, its permanence, the attitude towards government and the like.

Armed with economic and industry forecasts, the analyst is ready to look at the shares of the specific companies. Company information is generated internally and externally through financial statements and published reports respectively.

1.3.8 Self check Exercise

     1.   Explain Economic analysis.

     2.   Explain Industrial analysis

     3.   What is EPS

1.3.9 Glossary

(i)   Anticipatory surveys Conducting a personal contact or questionnaire based survey of possible future plans of government etc.

(ii)   Indicator / Barometric approach : This method helps to find out the leading, lagging, and coincidental indicators of economic activity.

(iii)   Diffusion Index : It takes together leading, lagging and coincidental factors and try to draw out a conclusion.

(iv)   Economic Models : It is a mathematical and statistical model which takes one independent variable and dependent variable to draw out a relationship.

(v)   Opportunistic Model : This method uses national accounting data to forecast future time period.

1.3.10 Exercise Questions :

1.   What is fundamental analysis? How is it useful for prospective investor?

2.   What is the meaning of company analysis? What financial statements in your opinion are helpful in undertaking the company's prospects?

     Short Notes

     Write notes :

     (i)   Stages in industry life cycle

     (ii)   Revenue Expense Approach

3.9 Suggested Readings :

(i)   Security analysis and Portfolio Management

           By Fisher and Jordan.

(ii)   Securities Analysis and Portfolio Management

           By V.A. Avadhani

(iii)   Investment Management

            By Preeti Singh

(iv)   Investment Management

            By V.K. Bhalla

(v)   Financial Management

            By Prassana Chandra

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