MP-501

# Vardhaman Mahaveer Open University, Kota

## Security Analysis and Portfolio Management

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## CONTENTS

## Security Analysis and Portfolio Management

# Unit – 1 : Investment

## Structure of Unit



## 1.0 Objectives

After reading this unit you should be able to understand :

- Concept and meaning of Investment.
- Features of Investment Programme.
- Perceptions behind Investment decision – making.
- Investment versus Speculation.
- Types of risk associated with Investment.
- What are the factors influencing the Investment?
- The Investment process.

## 1.1 Introduction

Investing wisely is an important part of financial security. One tries to invest money as early as possible so that the money will grow accordingly in his/her lifetime. Choosing a wise investment option is very crucial because a balance is required to be maintained between the risks and returns involved. For example, many people invest in private firms which offer very high interest rate but they may vanish after some time loosing all the invested money.

## 1.2 What is Investment?

Investment is the employment of funds with the aim of achieving additional income or growth in value. The essential quality of an investment is that it involves waiting for a reward. It involves the commitment of resources which have been saved or put away from current consumption in the hope that some benefits will accrue in future.

In simple terms, **investment** means conversion of cash or money into a monetary asset, a claim on future money for a return.

In **economics**, **investment** means the amount by which the stock of capital (plant, machinery, materials, etc.) in an enterprise or economy changes

In **finance**, **investment** is a conscious act of an individual or any entity that involves deployment of money ( cash ) in securities or assets issued by any financial institutions with a view to obtain the target returns (capital appreciation, dividend and/or interest earnings) over a specified period of time.

According to **Oxford Dictionary**, "**investment** means the investing of money".

### Activity A

1. Define the term investment as it relates to securities investment.

## 1.3 Features of Investment

The investor has various alternative avenues of investment for his savings to flow in accordance with his preferences. Savings flow into investment for a return, but savings kept as cash are barren and do not earn anything. Savings are invested in assets depending on their risk and return characteristics. Any rational investor knows that money is losing its value by the extent of the rise in prices. If the investment does not earn as much as the rise in prices or inflation, the real rate of return is negative. Thus, if inflation is at an average annual rate of 5%, then the return should be 5% or above to induce savings to flow into investment.

If an investment is made in short-term deposits with banks or in securities of Government, then the rate of interest is around 5-7%. As the risk of loss of money is almost negligible in such cases, the rate can be called a risk free return. All investments involve some risk or uncertainty. The objective of investor is to minimize the risk involved in investment and maximize the return.

**The following are the features of Investment Programme:**

**a) Safety of Principal**

The safety sought in investment is not absolute or complete; it rather implies protection against loss under reasonably likely conditions or variations. It calls for careful review of economic and industry trends before deciding types and/or timing of investments. Thus,

it recognizes that errors are unavoidable for which extensive diversification is suggested as an antidote.

Adequate diversification means assortment of investment commitments in different ways. Those who are not familiar with the aggressive-defensive approach nevertheless often carry out the theory of hedging against inflation-deflation. Diversification may be geographical, wherever possible, because regional or local storms, floods, droughts, etc. can cause extensive real estate damage. Vertical and horizontal diversification can also be opted for the same. Vertical diversification occurs when securities of various companies engaged in different phases of production form raw material to finished goods are held in the portfolio. On the other hand, horizontal diversification is the holding by an investor• in various companies all of which carry on activity is the secure stage of production.

Another way to diversify security is to classify them according to bonds and shares and reclassify according to types of bonds and types of shares. Again, they can also be classified according to the issuers, according to the dividend or interest income dates, according t the products which are made by the firm represented by the securities. But over diversification is undesirable. By limiting investments to a few issues, the investor has an excellent opportunity to maintain a knowledge of the circumstances corresponding each issue. Probably the simplest and most effective diversification is accomplished by holding different media at the same time having reasonable concentration in each.

**b) Adequate Liquidity and Collateral Value**

An investment is a liquid asset if it can be converted into cash without delay at full market value in any quantity. For an investment to be liquid it must be reversible, or marketable. The difference between reversibility and marketability is that reversibility is the process whereby the transaction is reversed or terminated while marketability involves the sale of the investment in the market for cash. To meet emergencies, every investor must have a sound portfolio to be sure of the additional funds which may be needed for the business opportunities. Whether money raising is; to be done by sale or by borrowing it will be easier if the portfolio contains a planned proportion of high-grade and readily saleable investment.

**c) Stability of Income**

Stability of income must be looked at in different ways just as was security of principal. An investor must consider stability of monetary income and stability of purchasing power of income. However, emphasis upon income, stability may not always be consistent with other investment principles. If monetary income stability is stressed, capital growth and diversification will be limited.

**d) Capital Growth**

Capital appreciation has today become an important principle. Recognising the connection between corporation and industry growth and very large capital appreciation, investors and their advisors constantly are seeking “growth stocks.” It is exceedingly difficult to make a successful choice. The ideal "growth stock" is the right issue in the right industry, bought at the right time.

**e) Tax Benefits**

To plan an investment programme without regard to one’s tax status may be costly to the investor. There are really two problems involved here, one concerned with the amount of income paid by the investment and the other with the burden of income taxes upon that income. When investors’ income is small, they are anxious to have maximum cash returns on their investment, and are prone to take excessive risk. On the other hands, investors who are not pressed for cash income often find that income taxes deplete certain types of investment income less than others, thus affecting their choices.

**f) Purchasing Power Stability**

Since an investment nearly always involves the commitment of current funds with the objective of receiving greater amounts of future funds, the purchasing power of the future fund should be considered by the investor. For maintaining purchasing power stability, investors should carefully study, the degree of price level inflation they expect, the possibilities of gain and loss in the investment available to them, and the limitations imposed by personal and family consideration.

**g) Concealability**

To be safe from social (disorder, government confiscation or unacceptable levels of taxation, property must be concealable and leave no record of income received from its use or sale. Gold and precious stones have long been esteemed for these purposes because they combine high value with small bulk and are readily transferable.

## 1.4 Perception of Investment

Investment has got three perceptions:

**a) Financial Perception**

Investment is the allocation of monetary resources to assets that are expected to yield some gain or positive return over a given period of time. There assets range form safe investments to risky investments. Investments in this form are also called ‘Financial Investments’.

**b) Economic Perception**

To the economist ‘Investment’ means the net additions to the economy’s capital stock which consist of goods & services that are used in the production of other goods & services. In this context, the term investment, therefore, implies the formation of new &

productive capital in the form of new construction, new producer's durable equipment such as plant & equipment.

**c) Social Perception**

An investment made to ensure communal harmony and social benefit. For eg. Investment in polio Campaign etc.

## 1.5 Investment and Speculation

Traditionally, investment is distinguished from speculation in there ways which are based on the factors of:

**(a) Risk**

It refers to the possibility of incurring a loss in a financial transaction in a broad sense, investment is considered to involve limited risk and is confined to those avenues where the principal is• safe. Speculation is considered as an involvement of funds of high risk. For eg; share for investment & for speculation.

**(b) Capital Gains**

Another distinction between investment and speculation emphasises that if the motive is primarily to achieve profits through price changes, it is speculation. If purchase of securities is preceded by proper investigation and analysis and review to receive a stable return over a period of time, it is termed as investment.

**(c) Time**

A longer term fund allocation is termed as investment. A short term holding is associated with trading for the "quick turn" and is called speculation.

Analysis of these distinctions help to identify the role of the investor and speculator. The investor constantly evaluates the worth of a security whereas the speculator is interested in market action and price movement. There are no established rules and laws which identify securities which are permanently for investment. There has to be a constant review of securities to find out whether it is a suitable investment. In short, we can say that investment is a well grounded and carefully planned speculation or good investment is a successful speculation. Therefore, investment and speculation are a planning of existing risks, if artificial and unnecessary risks are created for increased expected returns, it becomes gambling.

## Activity B :

1. State the economic and financial meaning of investment. In the stock market, can you differentiate the investor from the speculator?

## 1.6 Why Investments are Important

Some factors that have made investment decisions increasingly important are:

**a) Longer Life Expectancy**

Investments decisions have become significant as most people in India retire between the ages of 55 and 60. Also the trend shows longer life expectancy. The earnings from employment should therefore, b calculated in such a manner that a portion should be put away as savings. Savings by themselves do not increase wealth, these must be invested in such a way that the principal & income will be adequate for a greater number of retirement years.

**b) Increasing Rates of Taxation**

In India progressive taxation system is prevalent which means increasing income results in higher tax rates. In order to save tax various tax saving investment avenues are available.

**c) Interest Rates**

Interest rates vary between one investment and another. These may vary between risky and safe investments. They also differ due to different benefit schemes offered by the investments. A high rate of interest may not be the only factor favouring the outlet for investment. The investor has to include in his portfolio several kinds of investments. Stability of interest is as important as receiving a high rate of interest.

**d) Inflation**

Before funds are invested, erosion of the resources will have to be carefully considered in order to make the right choice of investments. Other factors to be considered are high rate of return continuity, safety of principal, taxation angle etc.

**e) Income**

Incomes in levee and more avenues of investment have led to the ability and willingness of working people to save and invest their funds.

**f) Investment Channels**

The growth and development of the country leading to greater economic activity has led to the introduction of a vast array of investment outlets. Apart form putting aside savings in savings banks where interest is low, investors have the choice of a variety of instruments.

## 1.7 Factors Favourable for Investment

The investment market should have a favourable environment to be able to function effectively in India. Where all business activities are marked by social, economic and political considerations, t is important that the political & economic institutions are

favourable. Generally, there are four basic considerations which foster growth and bring opportunities for investment. These are:

**a) Legal Safeguards**

A Stable government which frames adequate legal safeguards encourages acc4mulation of savings & investments. Investors will be willing to invest their funds if they have the assurance of protection of their contractual and property rights.

India, being a mixed economy, is a combination of the public sector controlled by the government and private sector left free to operate, hopes to achieve the benefits of both socialistic and capitalistic forms of government without their disadvantages. In India, the political climate is conducive to investment as government control lends stability to the capital market.

**b) A Stable Currency**

A reasonable stable price level which is produced by wise monetary & fiscal management contributes towards proper control, good government, economic well being and a well disciplined growth oriented investment market and protection to the investor.

**c) Existence of Financial Institutions**

The financial institutions and development banks offer a wide variety of policies for encouraging savings and investment. These institutions lend an element of strength to the capital market and promote discipline while encouraging growth.

**d) Form of Business Organization**

The form of Business Organization which is permanent in existence aids savings and investment. The public limited companies have been said to be the best form of organization, because of limited liability to shareholders, perpetual life and transferability and divisibility of stocks & shares.

## 1.9 The Investment Process - Stages in Investment

The investment process describes how are investor should go about making decisions with regards to what marketable securities to invest in how extensive. The investments should be and when the investments should be make. A five step procedure for making these decisions forms the basis of the investment process:

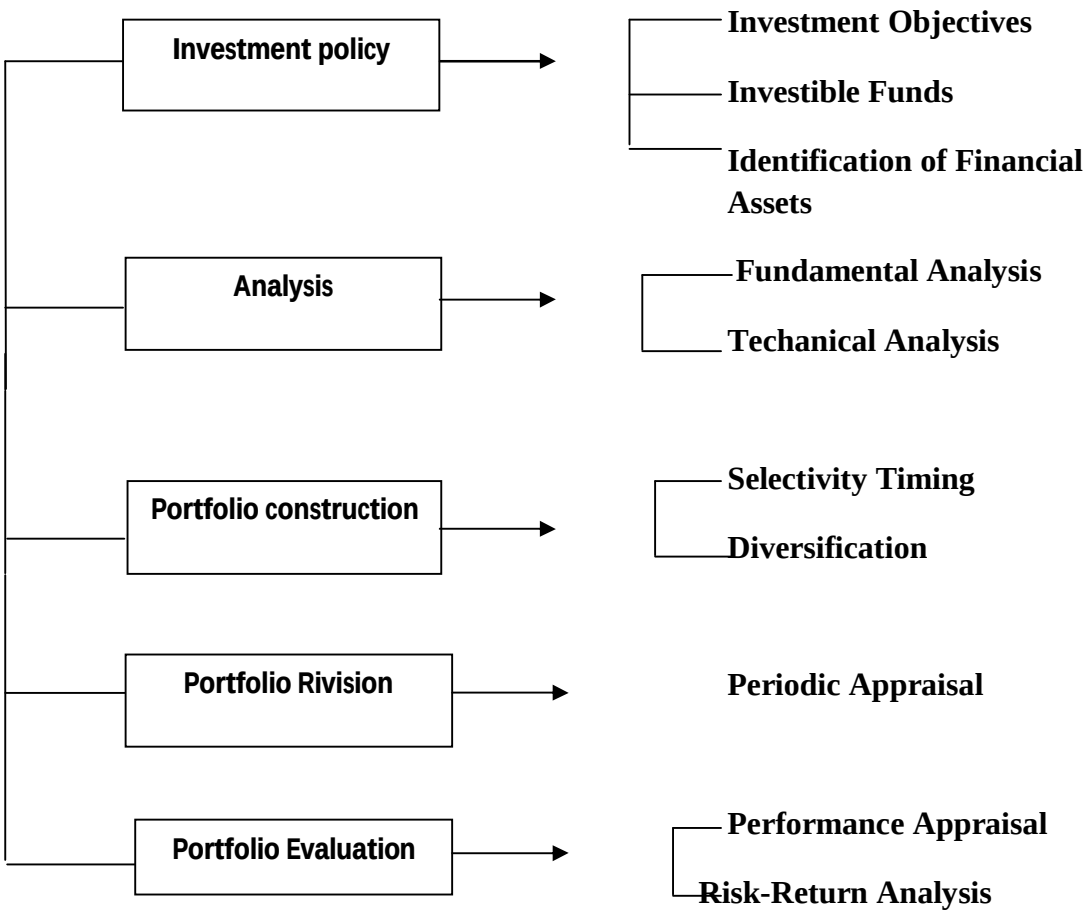


**Figure 1.1 Investment Process**

**a) Set Investment Policy**

The initial step, setting investment policy, involves determining the investor's objectives and the amount of his or her investable wealth. Investment objectives should be stated in terms of both risk & return. This step in the investment process concludes with the identification of the potential categories of financial assets for inclusion in the portfolio. This identification will be based on among other things, the investment objectives amount of investable wealth id tax status of the investor.

**b) Security Analysis**

The second step in the' investment process, performing security analysis, involves examining several individual securities (or group of secu4ties) with the broad categories of financial assets previously identified. One purpose for conducting such examinations is to identify those securities that currently appear to be mispriced. There are many approaches to security analysis such as Fundamental Analysis and Technical Analysis.

**c) Portfolio Construction**

The third step in the investment process, portfolio construction, involves identifying those specific assets in which to invest as well as determining the proportions of the

investor's wealth to put into each one. Here, the issues of selectivity, timing and diversification need to be addressed by the investor. Selectivity, also known as micro forecasting, refers to security analysis and thus focuses on forecasting price movements of individual securities. Timing, also known as macro forecasting, involves the forecasting of price movements of common stock in general relative to fixed income securities, such as corporate bonds and Treasury bills. Diversification, involves constructing the investor's portfolio in such a manner that risk is minimized, subject to certain restrictions.

**d) Portfolio Revision**

The fourth step in the investment process, portfolio revision, concerns the periodic repetition of the previous three steps. That is overtime the investor may change his or her investment objectives, which in turn may cause the currently held portfolio to be less than optimal. Perhaps the investor should form a new portfolio by selling certain securities that are currently held and purchasing certain others that are not currently held. Another motivation for revising a given portfolio is that over, time the prices of securities change, meaning that some securities that initially were not attractive may become attractive and others that were attractive at one time may 4o longer be so. Thus investor may want to add the former to his or her portfolio. While simultaneously declining the latter. Such a decision will depend upon, among other things, the size of the transaction costs incurred in making these changes and the magnitude of the perceived improvement in the investment outlook for the revised portfolio.

**e) Portfolio Performance Evaluation:**

The fifth step in the investment process, portfolio performance evaluation, involves determining periodically how the portfolio performed, in terms of not only the return earned but also the risk experienced by the investor. Thus appropriate measures/of return and risk as well as relevant standards are needed.

## Activity C:

1. Write and illustrate the step-by-step process of investment.

## 1.9 Types of Investors

Many successful investors adopt an investment strategy that fits their goals and tolerance for risk. While there are many variations, most strategies fit within one or more of these:

- Growth
- Value
- Income
- Buy and Hold
- Fundamental
- Technical
- Angel

- Active
- Passive
- Emotional

Investment strategies can be selected on the basis need and goal in life.It is important to identify clear reasons for selecting there investment strategy. Market conditions may favor one strategy over the other. For example, when the market or a market sector is booming, growth strategies become the rage. A down or declining market may favor the value investor. However, all strategies can work in almost any market conditions - sometimes the market makes easier than other times.

**a) Growth Investors**

As the name implies, growth investors look for the rising stars. They are interested in companies that have high potential for earning growth. High earning growth invariably leads to high stock prices - at least in theory. Growth investors are willing to bet on young (or not so young) companies that show promise of becoming leaders in their industry.

The technology stocks, especially during the late 1990s, were the perfect example of growth stocks. Many of the young companies started with an idea and nothing more and now are large successful companies. Of course, a great many more of those same technology companies started out with an idea and nothing more and ended up where they started. Which is to say that growth investing carries the risk that some of the investments are going to fail.

**b) Value Investors**

Value investors look for the stocks that the market has overlooked. Value doesn't mean cheap as in low per share price, but under priced relative to the value of the company. These are stocks the market has passed over while chasing some other industry sector or more glamorous investments. The value investor looks for stocks with a low price/earnings ratio meaning the market is not willing to pay much in the way of a premium for the stock. Of course, the value investor needs to make sure there in nothing wrong with the company that would warrant a low stock price other than neglect or market inattention. Assuming the company is solid, the value investor's strategy is to buy and hold the stock, anticipating the future time when the market will recognize the company's worth and bid the stock up to its true value. In addition to extensive homework on the company and its role in the market, the value investor must be patient to buy at a great price - much below the true value. This gives them the margin for profit when the company's fortunes improve.

**c) Income Investors**

Income investing is the most straight-forward of all strategies and the most conservative. Income is the motivation and investors target companies paying high and consistent dividends. People near or in retirement are fond of this strategy for obvious reasons. The companies that qualify for the income investor tend to be large and well-established. There is always some risk involved in investing in stocks, however this remains the most conservative of the investing strategies. Income investors are more interested in current income and capital preservation. If the stock price increases, that's icing on the cake for the income investor who would probably trade some capital appreciation for a higher dividend.

**d) Buy and Hold investors**

Buy and hold investors believe ‘time in the market’ is a more prudent investment style than "timing the market." The strategy is applied by buying investment securities and holding them for long periods of time because the investor believes that long-term returns can be reasonable despite the volatility characteristic of short-term periods. This strategy is in opposition to absolute market timing, which typically has an investor buying and selling over shorter periods with the intention of buying at low prices and selling at high prices.

The buy-and-hold investor will argue that holding for longer periods requires less frequent trading than other strategies. Therefore trading costs are minimized, which will increase the overall net return of the investment portfolio.

**e) Fundamental Investors**

Fundamental analysis is a form of an active investing strategy that involves analyzing financial statements for the purpose of selecting quality stocks. Data from the financial statements is used to compare with past and present data of the particular business or with other businesses within the industry. By analyzing the data, the investor may arrive at a reasonable valuation (price) of the particular company's stock and determine if the stock is a good purchase or not.

**f) Technical Investors**

Investors using technical analysis (technical traders) often use charts to recognize recent price patterns and current market trends for the purpose of predicting future patterns and trends. In different words, there are particular patterns and trends that can provide the technical trader certain cues or signals, called indicators, about future market movements. For example, some patterns are given descriptive names, such as ‘head and shoulders’ or ‘cup and handle.’ When these patters begin to take shape and are recognized, the technical trader may make investment decisions based upon the expected result of the pattern or trend.

**g) Angel Investor**

An angel investor, sometimes just referred to as an angel, is an individual who invests private funds in a company or product for personal reasons. The term is sometimes contrasted with venture capital investors, who provide seed capital for similar things from corporate or partnership funds, with financial gain the main motive. Motivations for angel investors include interest in a particular area or a belief in the product, as well as more personal reasons.

**h) Active Investors**

An active investor is one that has an explicit or implicit objective of "beating the market." In simple terms, the word active means that an investor will try to pick investment securities that can outperform a broad market index. These individuals have a high-risk tolerance and less of a need for security. Active investors are more likely to invest on the basis of their experience and expertise, and believe that they know more than their advisor does. They are less likely to delegate the maintenance of those parts of their investment portfolio in which they believe they have experience or have had personal success. However, these individuals are more likely to be contrarian in their stock picking habits and have less need to be completely diversified.

**i) Passive Investors**

The passive investing strategy can be described by the idea that “if you can’t beat ‘em, join 'em." Active investing is in contrast to passive investing, which will often employ the use of index funds and ETFs, to match index performance, rather than beat it. Passive Investors are individuals who have become wealthy passively - by inheriting, by a professional career or by risking the money of others rather than their own money. To these investors security is more important than risk. These investors are risk averse, they tend to like diversified portfolios of investments in quality companies or investment products.

**j) Emotional Investors**

Emotional investors make decisions by impulse or hype and they have great difficulty disengaging from poor investments or cutting losses. Their investments are fueled by irrational exuberance and irrational pessimism. Emotional investors systematically overestimate their ability to predict the next move in the price of different stocks, take short cuts, rely on stories rather than detailed data analysis; and end up taking excessive risks. These investors are easily attracted to fashionable investments or ‘hot’ tips, and act with their heart and not their head.

These investing strategies take in a large number of investors, however it is not required that you fall purely in one camp or another. As a practical matter, you will likely modify your investing philosophy as your life circumstances change.

## 1.10 Risks Associated with Investments

In considering economic and political factors, investors commonly identify five kinds of risks to which their investments are exposed. They are :

**a) Business Risk :** Business risk is the measure of risk associated with a particular security. It is also known as unsystematic risk and refers to the risk associated with a specific issuer of a security. Generally speaking, all businesses in the same industry have similar types of business risk. But used more specifically, business risk refers to the possibility that the issuer of a stock or a bond may go bankrupt or be unable to pay the interest or principal in the case of bonds. A common way to avoid unsystematic risk is to diversify - that is, to buy mutual funds, which hold the securities of many different companies.

**b) Purchasing Power Risk :** Also known as inflation risk, is the chance that the value of an asset or income will be eroded as inflation shrinks the value of a country's currency. Put another way, it is the risk that future inflation will cause the purchasing power of cash flow from an investment to decline. The best way to fight this type of risk is through appreciable investments, such as stocks or convertible bonds, which have a growth component that stays ahead of inflation over the long term.

**c) Market Risk :** Market risk, also called systematic risk, is a risk that will affect all securities in the same manner. In other words, it is caused by some factor that cannot be controlled by diversification.

**d) Interest Rate Risk :** Interest rate risk affects all investors regardless of whether the investors hold short – term or long – term bonds. Changes in interest rate have the greatest impact on the market price of long – term bonds, since longer the maturity period, the greater the effect of change in interest rates. On the other hand, changes in interest rates will not have much of an impact on the market price of short – term bonds, but the interest income on a short – term bonds portfolio may fluctuate more from period to period, as interest rates change.

**e) Social / Political or legislative Risk :** Risk associated with the possibility of nationalization, unfavorable government action or social changes resulting in a loss of value is called social or regulatory risk. Because the ruling government has the power to change laws affecting securities, any ruling that results in adverse consequences is also known as legislative risk.

**f) Currency/Exchange Rate Risk :** Currency or exchange rate risk is a form of risk that arises from the change in price of one currency against another. The constant fluctuations in the foreign currency in which an investment is denominated vis-à-vis one's home currency may add risk to the value of a security.

**g) Reinvestment Risk :** In a declining interest rate environment, bondholders who have bonds coming due or being called face the difficult task of investing the proceeds in bond issues with equal or greater interest rates than the redeemed bonds. As a result,

they are often forced to purchase securities that do not provide the same level of income, unless they take on more credit or market risk and buy bonds with lower credit ratings. This situation is known as reinvestment risk: it is the risk that falling interest rates will lead to a decline in cash flow from an investment when its principal and interest payments are reinvested at lower rates.

**h) Liquidity Risk :** Liquidity risk refers to the possibility that an investor may not be able to buy or sell an investment as and when desired or in sufficient quantities because opportunities are limited. A good example of liquidity risk is selling real estate. In most cases, it will be difficult to sell a property at any given moment should the need arise, unlike government securities or blue chip stocks.

## 1.11 Summary

An investment is a process of sacrificing something now for the prospect of gaining something later. Generally, all personal investments are designed in order to achieve a goal which may be tangible (e.g., gold, house etc.) or intangible ( e.g., social status or goodwill etc.). Stability of principal, liquidity, stability of income, capital growth, tax liability, purchasing power risk tolerance are identified as constraints for an investor seeking fulfillment of the goals.

## 1.12 Self Assessment Questions

1. Why do people invest? What are the factors which are favourable for making investments in an economy?
2. Explain in detail the reasons for the emerging popularity of investment in today's world.
3. " Investment is a well grounded and carefully planned speculation."In the light of the above statement, explain and differentiate between 'Investment' and 'Speculation'.

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# Unit – 2 Investment Alternatives

## Structure of Unit



## 2.0 Objectives

After completing this unit, you would be able to:

- Develop an understanding of investment alternatives;
- Explain different types of investment alternatives;
- Classify the investment alternatives on the basis of Negotiable financial instruments, Non-negotiable financial instruments and other financial instruments;
- Discuss fixed income and variable income securities;
- To portray the major Non-negotiable financial instruments;
- Explain the concepts, types, advantages and disadvantages of Mutual funds and Real Estate.

## 2.1 Introduction

The problem of surplus gives rise to the question of where to invest. At present, a wide variety of investment avenues are open to the investors to suit their needs and nature. Knowledge about the different avenues enables the investors to choose investment intelligently. The required level of return and the risk tolerance level decide the choice of the investor. The investment alternatives range from negotiable financial instruments to non-negotiable financial instruments.

The negotiable financial instruments are financial securities that are transferable. These kinds of securities may yield variable or fixed income. On the other side the non-negotiable financial investment as the name itself suggest is not transferable. This is also known as non-securitized financial instruments.

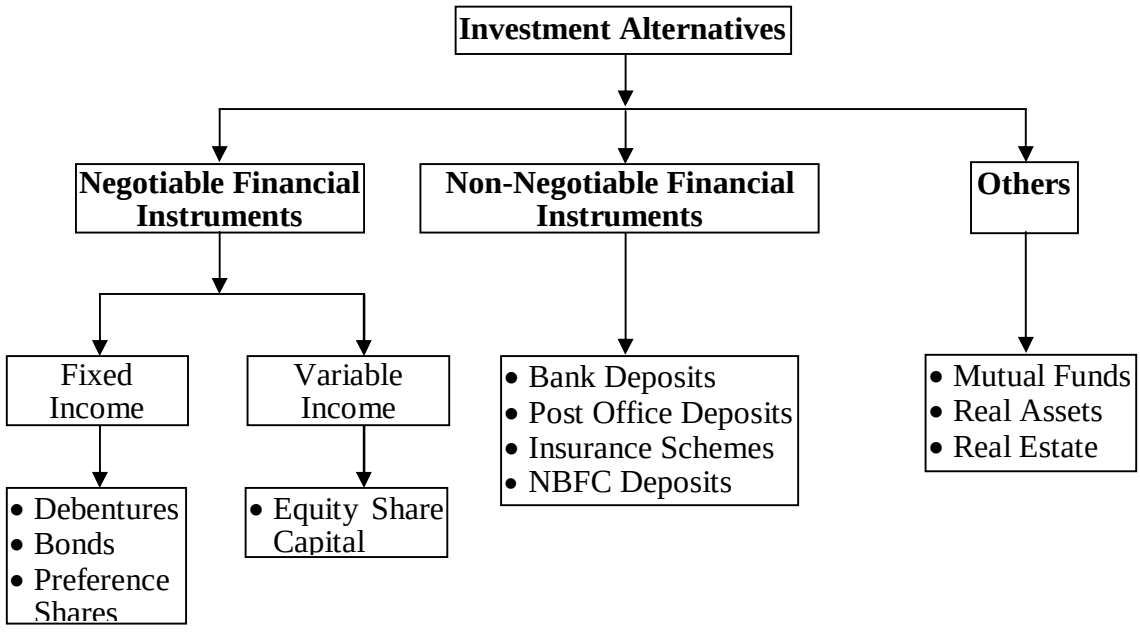


**Figure 2.1 –Classification of Investment Alternatives**

## 2.2 Negotiable Financial Instruments

The negotiable financial instruments are financial securities that are transferable in nature. These are further classified as Fixed Income Securities and Variable Income Securities.

### 2.2.1 Fixed Income Securities

Fixed income refers to any type of investment under which the borrower/issuer is obliged to make payment of a fixed amount on a fixed schedule: for example, if the borrower has to pay interest at a fixed rate once a year, and to repay the principal amount on maturity. Following can be classified as fixed income securities:

**a) Debentures**
**b) Bonds**
**c) Preference Shares**

#### 2.2.1.1 Debentures

According to Companies Act 1956 "Debenture includes debenture stock, bonds and any other securities of company, whether constituting a charge on the assets of the company or not". Debentures are generally issued by the private sector companies as a long-term promissory note for raising loan capital. The company promises to pay interest and principal as stipulated. Bond is an alternative form of debenture in India. Public sector companies and financial institutions issue bonds.

**Features of Debentures**

- **Form –** It is in the form of certificate of indebtedness by the company specifying the date of redemption and interest rate
- **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, semiannually or quarterly. The company has the legal binding to pay the interest rate.
- **Redemption –** As the state earlier the redemption date would be specified in the issue itself. The maturity may range from 5 years to 10 years in India.

**Types of Debentures**

- **Secured and Unsecured Debentures –** in case of secured debentures a charge wither or floating is created on the whole or any part of the assets of the company. Unsecured or naked debentures are simple promise to pay the amount involving no charge or security on the assets of the company.
- **Convertible and Non-convertible Debentures –** Sometimes convertible debentures are issued by a company in which debenture holders are given an option to exchange the debentures into equity shares after the expiry of a specified period. **Non-convertible debentures** cannot be converted into equity shares.

#### 2.2.1.2 Bonds

Bond is a long term debt instrument that promises to pay a fixed annual sum as interest for specified period of time. The basic features of the bonds are given below:

**(a)** Bonds have face value. The face value is called par value. The bond may be issued at par or at discount.
**(b)** The interest rate is fixed. Sometimes it may be variable as in the case of floating rate bond. Interest is paid semi-annually or annually. The interest rate is known as coupon rate. The interest rate is specified in the certificate.
**(c)** The maturity date of the bond is usually specified at the issue time except in the case of perpetual bonds.
**(d)** The redemption value is also stated in the bonds. The redemption value may be at par value or at premium.
**(e)** Bonds are traded in the stock market. When they are traded, the market value may be at par or at discount or discount. The market value and the redemption value need not be the same.

**Types of bonds**

- **Secured Bonds and unsecured Bonds –** The secured bond is secured by the real asset of the issuer. In the case if the unsecured bond the name and the fame may be the only security.
- **Perpetual bonds and redeemable bonds –** Bonds that do not mature or never mature are called perpetual bonds. The interest alone would be paid. In the redeemable bond, the bond is redeemable after a specified period of time. The redemption value is specified by the issuer.

- **Fixed interest rate bonds and floating interest rate bonds –** In the fixed interest rate bonds, the interest rate is fixed at the time of the issue. Whereas in the floating in the floating rate bonds, the interest rates change according to the prefixed norms.
- **Zero coupon bonds –** These types of bonds sell at a discount and the face value is repaid at maturity. The difference between the purchase cost and face value of the bond is the gain for the investors.
- **Capital indexed bonds –** In the capital indexed bond, the principal amount of the bond is adjusted for inflation for every year.

#### 2.2.1.3 Preference Shares

Preference shares as the, name suggest are shares having certain preference as compared to other type of shares. According to Companies Act 1956 "A preference share is a share which carries preferential rights as to the payment of dividend at a fixed rate either free or subject to income tax and as to the payment of capital at the time of liquidation prior to equity shareholders."

Thus, preference shareholders enjoy two rights over equity shares. First, they are entitled to receive dividend prior to the payment of dividend on equity shares. Second, at the time of winding up of the economy, the preference share capital is repaid prior to equity share capital. Generally, dividend on these shares is paid at predetermined fixed rate which is decided at the time of issue.

**Features of Preference Shares**

- **Claims on income –** Preference shareholders have priority of claim to dividend over equity shareholders.
- **Claims on Assets –** Although no specific assets are pledged against the preference shares, yet the preference shareholders have prior claim on the general assets of the company, over equity shares.
- **No controlling power –** Preference shareholders do not have the right to participate in the management of the company, hence, they too have no voting power like equity shareholders.

**Types of Preference Shares**

- **Cumulative and Non-cumulative –** The holders of **cumulative preference** shares enjoy the right to receive the arrears of dividend for a year, if the company has not paid dividend at fixed rate due to lack sufficient profits for that particular year. In case of **non-cumulative shares**, the dividend does not accumulated, if it is not paid in a particular year due to insufficient or no profits.
- **Redeemable and irredeemable –** The preference share which would be repaid on or after a certain period/date in accordance with the terms of issue, are known as **redeemable preference shares**. Irredeemable preference shares are those which cannot redeemed during the life-time of company.
- **Participating and non-participating -** The holders of participating preference shares are entitled, in addition to fixed dividend, the share in the surplus profits remaining after paying a certain amount of dividend on equity shares. The non

participating preference shares do not carry the right to share in the surplus profits or assets of the company. They are paid only a fixed dividend.

- **Convertible and non-convertible** The holders of convertible preference shares have the right to convert their shares into equity shares within a fixed period of time. **Non-convertible preference shares** are those which cannot be converted into equity shares.

### 2.2.2 Variable Income Securities

Variable income is the unknowing of the future revenues of an investment, due to the unpredictability of the markets, instability of surroundings, variability between the offer and demand etc. The true example of variable income security is Equity Shares.

#### 2.2.2.1 Equity Shares

Share capital of a company is divided into a number of small units of equal value called shares. A company can issue two types of shares-equity shares and preference shares. Equity shares or ordinary shares are those shares which carry no preferential right in the payment of dividend and refund of capital. An equity share is the existing of real ownership and residual interest in the earnings of the company. Equity shareholders bear the maximum risk and therefore they control the affairs of the company from legal point of view. The term stock is the aggregate of a member's fully paid up shares of equal value merged into one fund. It is a set of shares put together in a bundle. The 'stock' is expressed in terms of money and not as many shares. Stock can be divided into fractions of any amount and such fractions may be transferred like shares.

Equity shares have the following rights according to section 85 (2) of the Companies Act 1956.

**(a)** Right to vote at the general body meetings of the company
**(b)** Right to control the management of the company
**(c)** Right to share in the profits in the form of dividends and bonus shares
**(d)** Right to claim on the residual after repayment of all the claims in the case of winding up of the company
**(e)** Right of pre-emption in the matter of issue of new capital
**(f)** Right to apply to court if there is any discrepancy in the right set aside
**(g)** Right to receive a copy of the statutory report, copies of annual accounts along with audited report
**(h)** Right to apply the central government to call an annual meeting when a company fails to call such a meeting.
**(i)** Right to apply the Company Law Board for calling an extraordinary general meeting

In a limited company the equity shareholders are liable to pay the company's debt only to the extent of their share in the paid up capital. The equity shares have certain advantages. The main advantages are:

- Capital appreciation
- Limited liability
- Free tradability

- Tax advantages (in certain cases)
- Hedge against the inflation

**Shares with Differential Rights**

As per companies (Issue of Share Capital with Differential Voting Rights) Rules, 2001, any company limited by shares can issues equity shares with differential rights as to voting, dividend or otherwise subject to the fulfillment of certain conditions. The shares with differential voting right shall not exceed 25% of the total share capital issued. A member of the company holding any equity share with differential right shall be entitled to bonus shares, rights shares of the same class and enjoy all other rights to which the holder is entitled except the differential right.

**a) Sweat Equity**

Sweat equity is a new equity instrument introduced in the Companies (Amendment) Ordinance, 1998. Newly inserted Section 79A of the Companies Act, 1956 allows issue of sweat equity. However, it should be issued out of 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 seat equity. Thus, sweat equity forms a part of equity share capital.

The definition of sweat equity has two different dimensions:

- Shares issued at a discount to employees and directors
- Shares issued for consideration other than cash for providing know0how or making available rights in the nature of intellectual property rights or value additions, by whatever name called.

**Reasons for Issuing Sweat Equity**

Directors and employees contribute intellectual property rights to the company. This may be in the form of providing technical know-how captured by way research, contributing to the company in the form of strategy, software developed for the company, or adding profit.

- Traditional way of recognizing the employees and directors in the form of monetary and non-monetary benefit is deficient. Even incentive bonus on the basis of performance fails to reward them adequately. Rather in the matter of intellectual property right, the contributing employees/ directors are not well protected.
- In case a director/employee leaves the company or is asked to leave, his contribution which will generate cash flows to the company for an unidentified future period does bring adequate return to him.

**Sweat Equity is for**

- Directors/employees who designed strategic alliance
- Directors/employees worked for strategic market penetration and helped the company attain sustainable market share

  In the service industry, sweat equity has a special relevance. The major industries where the directors and employees can be rewarded through sweat equity are:

- Computer hardware and software development
- Management consultancy where a standard is issued to earn a fee, like Enterprise Resource Planning (ERP) solution
- NBFCs where product design is crucial
- Other non-traditional financial service industries like custodians, depositories credit rating wherein basic service design is important.

**B) Right Shares**

The shares offered to the existing shareholders u/s 81 of Indian Companies Act, 1956 as a matter of legal right, are called right shares. If a public company wants to increase its subscribed capital by way of issuing shares after two years from its formation date or one year from the date of first allotment, whichever is earlier, such shares should be offered first to the existing shareholders in proportion to the capital paid up on the shares held by them at the date of such offer. This pre-emptive right can be forfeited by the shareholders through a special resolution. A shareholder can renounce the right shares in favor of his nominee. He may renounce all or part of the shares offered to him. The right shares may be partly paid. Right issues are regulated under the provisions of the Companies Act and SEBI.

**c) Bonus Shares**

Bonus share is 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. The aim of bonus share is to capitalize the free reserve. The bonus issue is made out of free reserve 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.

**Stock Market Classification of Equity Shares**

In stock market conservation, shares may be classified into the following categories:

**(i) Blue Chip Shares –** Shares of large, well established and financially strong companies with an impressive record of earnings and dividends are generally referred to as blue chip shares. The price volatility of such shares tends to be moderate.
**(ii) Growth Shares** – The stock have higher rate of growth than the industrial growth rate in profitability are referred to as growth shares.
**(iii)Income Shares** – These stocks belong to companies that gave comparatively stable operations and limited growth opportunities. The bank shares and some of the FMCG stocks may be termed as income shares.
**(iv)Defensive Shares** – These kind of shares are relatively unaffected by the market movements.
**(v) Cyclical Shares** – The business cycle affects the cyclical shares. The upward and downward movements of the business cycle affect to business prospects of certain companies and their stock prices.
**(vi)Speculative Shares** – Shares that have lot of speculative trading in them are referred to as speculative shares. During the bull and bear phase of the market, this type of shares attracts the attention of the traders.

## 2.3 Non-Negotiable Instruments

### 2.3.1 Bank Deposits

Bank deposit is the simplest investment avenue open for the investors. A bank can be made by opening a bank account and depositing money in it. There are several ways to which an investor can make investment with banks. Few of them are as follows:

#### 2.3.1.1 Bank Fixed Deposits

Bank fixed deposits are also known as term deposits. In a fixed deposit account, a certain sum of money is deposited in the bank for a specified time period with a fixed rate of interest.

The rate of interest for bank fixed deposits depends on the maturity period. It is higher in case of longer maturity period. There is great flexibility in maturity period and it ranges from 7 days to 10 years. The interest is compounded annually and is added o the principal amount. The minimum deposit amount is Rs. 1000/- and there is no upper limit.

Loan/overdraft facility is available against bank fixed deposits. Premature withdrawal is permissible but some penalty is levied. Tax deductible at source, if the interest paid/ payable on deposit exceeds Rs. 5000/- per customer, per year, per branch or as per norms decided by Ministry of Finance, Income tax department from time to time.

#### 2.3.1.2 Current Account

Current account is primarily meant for businessmen, firms, companies, public enterprises etc. that have numerous daily banking transactions. Current accounts are meant neither for the purpose of earning interest nor for the purpose of savings but only for convenience of the business, hence they are non-interest bearing account. Current account holders get one important advantage of **overdraft** facility

**Features of Current Bank Account ↓**

The main features of current account are as follows:-

- Current bank accounts are operated to run a business.
- It is a non-interest bearing bank account.
- It needs a higher minimum balance to be maintained as compared to the savings account.
- Penalty is charged if minimum balance is not maintained in the current account.
- It charges interest on the short-term funds borrowed from the bank.
- It is of a continuing nature as there is no fixed period to hold a current account.
- It does not promote saving habits with its account holders.
- Banker requires KYC (Know your Customers) norms to be completed before opening a current account.
- The main objective of current bank account is to enable the businessmen to conduct their business transactions smoothly.

- There is no restriction on the number and amount of deposits.
- There is also no restriction on the number and amount of withdrawals made, as long as the current account holder has funds in his bank account.
- Generally, bank does not pay any interest on current account. Nowadays, some banks do pay interest on current accounts.

**Advantage of Current Bank Account**

The advantages of current account are as follows:-

1. Current account is mainly opened for businessmen such as proprietors, partnership firms, public and private companies, trust, association of persons, etc. that has a large number of daily banking transactions, i.e. receipts and/or payments.
2. It enables businessmen to carry out their business transactions properly and promptly.
3. The businessmen can withdraw from their current accounts without any limit, subject to banking cash transaction tax, if any levied by the government.
4. Home branch is that location where one opens his bank account. There are no restrictions on deposits made in the current account opened in a home branch of a bank. However, the current account holder can deposit the cash from any other branch of a bank other than the home branch by paying a nominal charge as applicable.
5. It helps businessmen to make a direct payment to their creditors by issuing cheques, demand-drafts or pay-orders, etc.
6. It enables a bank to collect money on behalf of its customers and credits the same in their customers' current accounts.
7. It enables the current account holder to obtain overdraft (short-term borrowing) facility.
8. The creditors of the account holder can get credit-worthiness information of the account holder through inter-bank connection.
9. It facilitates the industrial progress of the country. Without its help, businessmen would face difficulties in running their businesses.
10. It has the facilities of Internet-banking and mobile-banking to carry out important business transactions with ease and quickly.
11. It also provides various other advantages (benefits) such as:
    - Deposit and withdrawal of money (cash) at any location.
    - Multi-location funds transfer,
    - Electronic funds transfer,
    - Periodical (monthly, quarterly or yearly) e-mail or download of bank statements in various formats like '.XLS', '.TXT', '.PDF', etc.
    - Support from customer care executives

### 2.3.1.3 Demat Account

In India, shares and securities are held electronically in a Dematerialized (Demat) account, instead of the investor taking physical possession of certificates. A Dematerialized account is opened by the investor while registering with an investment broker (or sub-broker). The Dematerialized account number is quoted for all transactions to enable electronic settlements of trades to take place. Every shareholder will have a Dematerialized account for the purpose of transacting shares.

Access to the Dematerialized account requires an internet password and a transaction password. Transfers or purchases of securities can then be initiated. Purchases and sales of securities on the Dematerialized account are automatically made once transactions are confirmed and completed.

**Benefits of Demant**

The benefits of demat are enumerated as follows:

- Easy and convenient way to hold securities
- Immediate transfer of securities
- No stamp duty on transfer of securities
- Safer than paper-shares (earlier risks associated with physical certificates such as bad delivery, fake securities, delays, thefts etc. are mostly eliminated)
- Reduced paperwork for transfer of securities
- Reduced transaction cost
- No "odd lot" problem: even one share can be sold
- Change in address recorded with a DP gets registered with all companies in which investor holds securities eliminating the need to correspond with each of them separately.
- Transmission of securities is done by DP, eliminating the need for notifying companies.
- Automatic credit into demat account for shares arising out of bonus/split, consolidation/merger, etc.
- A single demat account can hold investments in both equity and debt instruments.
- Traders can work from anywhere (e.g. even from home).

### 2.3.1.4 Saving Bank Account

Saving accounts are opened to encourage the people to save **money** and collect their savings.

In India, saving account can be opened by depositing ₹100 (approx. US $2) to ₹5000 (approx. US $100). The saving account holder is allowed to withdraw money from the account as and when required. The interest which is given on saving accounts is sometime attractive, but often nominal.

At present, the rate of interest ranges from 4% to 6% per annum in India. The interest rates vary as per the amount of money deposited (lying) in the saving bank account,

scheme opted, and its maturity range. It is also subject to current trend of banking policies in a country.

**Features of Saving Account**

The main features of saving account in bank are as follows:

- The main objective of saving account is to promote savings.
- There is no restriction on the number and amount of deposits. However, in India, mandatory PAN (Permanent Account Number) details are required to be furnished for doing cash transactions exceeding ₹50,000.
- Withdrawals are allowed subject to certain restrictions.
- The money can be withdrawn either by cheque or withdrawal slip of the respective bank.
- The rate of interest payable is very nominal on saving accounts. At present it is between 4% to 6% p.a in India.
- Saving account is of continuing nature. There is no maximum period of holding.
- A minimum amount has to be kept on saving account to keep it functioning.
- No loan facility is provided against saving account.
- Electronic clearing System (ECS) or E-Banking are available to pay electricity bill, telephone bill and other routine household expenses.
- Generally, equated monthly installments (EMI) for housing loan, personal loan, car loan, etc., are paid (routed) through saving bank account.

### 2.3.1.5 Recurring Deposit

Recurring deposit account is generally opened for a purpose to be served at a future date. Generally opened to finance pre-planned future purposes like, wedding expenses of daughter, purchase of costly items like land, luxury car, refrigerator or air conditioner, etc.

Recurring deposit account is opened by those who want to save regularly for a certain period of time and earn a higher interest rate.

In recurring deposit account certain fixed amount is accepted every month for a specified period and the total amount is repaid with interest at the end of the particular fixed period.

**Features of Recurring Deposit Account**

The main features of recurring deposit account are as follows:-

- The main objective of recurring deposit account is to develop regular savings habit among the public.
- In India, minimum amount that can be deposited is Rs.10 at regular intervals.

- The period of deposit is minimum six months and maximum ten years.
- The rate of interest is higher.
- No withdrawals are allowed. However, the bank may allow closing the account before the maturity period.
- The bank provides the loan facility. The loan can be given upto 75% of the amount standing to the credit of the account holder.

#### 2.3.1.6 Self Liquidating FDR

This is a fixed deposit scheme, in which instead of one single FDR, the bank issues several FDR of small denominations. In these, there is a provision of partial liquidation of deposited amount. Due to such partial liquidation there is no loss of interest on the remaining amount of FDR.

## Activity A :

Collect the information on rate of interest of the commercial banks on saving bank account, FDRS and Recurring Deposits.

### 2.3.2 Postal Services In India

The main financial services offered by the Department of Posts are the Post Office Savings Bank. It is the largest and oldest banking service institution in the country. The Department of Posts operates the Post Office Savings Scheme function on behalf of the Ministry of Finance, Government of India. Under this scheme, more than 20.50 crores savings account are operated. These accounts are operated through more than 1,54,000 post offices across the country.

Indian Post offers several Savings Schemes which are:

- backed by the Government of India
- safe, secure and risk-free investment options
- not deducting any Tax at Source (NO TDS)
- providing nomination facility
- transferable to any Post Office anywhere in India
- offering attractive rates of interest.

#### 2.3.2.1 Savings Account

Post office saving account is similar to a savings account in a bank. It is a safe instrument to park those funds, which you might need to liquidate fully or partially at very short notice. Post office savings accounts are especially suited for those living in rural and semi-rural areas where the reach of banks is very limited.

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 80 L of income tax act.

#### 2.3.2.2 Recurring Deposit Account (RDA)

- Amount of Investments: min - Rs. 10 p.m. or any amount in multiples of Rs. 5
- Amount of Investments: max - No maximum limit
- Payment Terms:The deposit shall be paid as monthly installments
- Maturity Terms: One withdrawal is allowed after one year of opening a post-office RDA or You can withdraw up to half the balance lying to your credit at an interest charged at 15%
- Returns: The PO RD offer a fixed rate of interest, currently at 8 %pa compounded qtr.
- Tax Considerations: Interest is liable to tax however there is No TDS from interest

#### 2.3.2.3 Post Office Monthly Income Scheme (MIS)

**Salient Features:**

- Interest rate of 8.4% per annum payable monthly as on 01-04-2013
- Maturity period is 5 years.
- No Bonus on Maturity as on 01.12.2011.
- No tax deduction at source (TDS).
- No tax rebate is applicable.
- Minimum investment amount is Rs.1500/- or in multiple thereafter.
- Maximum amount is Rs. 4.50 lakhs in a single account and Rs.9 lakhs in a joint account.
- Auto credit facility of monthly interest to saving account if accounts are at the same post office.
- Account can be opened by an individual, two/three adults jointly, and a minor through a guardian.
- Non-Resident Indian / HUF cannot open an Account.
- Minors have a separate limit of investment of Rs. 3 lakhs and the same is not clubbed with the limit of guardian.
- Facility of premature closure of account after 1 year but on or before 3 years @ 2.00% discount.
- Deduction of 1% if account is closed prematurely at any time after three years.
- Suitable scheme for retired employees/ senior citizens and for those who need regular monthly income.

#### 2.3.2.4 National Savings Certificate (NSC)

**Salient Features:**

- NSC VIII Issue (5 years) – Interest rate of 8.5% per annum as on 01-04-2013
- NSC IX Issue (10 years) - Interest rate of 8.8% per annum as on 01-04-2013
- Minimum investment Rs. 100/-. No maximum limit for investment.

- No tax deduction at source.
- Investment up to Rs 1,00,000/- per annum qualifies for Income Tax Rebate under NSC - section 80C of IT Act.
- Certificates can be kept as collateral security to get loan from banks.
- Trust and HUF cannot invest.
- A single holder type certificate can be purchased by an adult for himself or on behalf of a minor or to a minor.
- The interest accruing annually but deemed to be reinvested will also qualify for deduction under NSC - section 80C of IT Act.

#### 2.3.2.5 Public Provident Fund (PPF)

**Salient Features:**

- Interest rate of 8.7% per annum as on 01-04-2014.
- Minimum deposit is 500/- per annum. Maximum deposit is Rs. 1,00,000/- per annum
- The scheme is for 15 years.
- Investment up to Rs 1,00,000/- per annum qualifies for Income Tax Rebate under section 80C of IT Act.
- Interest is completely tax-free.
- Deposits can be made in lumpsum or in 12 installments.
- One deposit with a minimum amount of Rs 500/- is mandatory in each financial year.
- Withdrawal is permissible from 6th financial year.
- Loan facility available from 3rd financial year.
- Free from court attachment.
- Non-Resident Indians (NRIs) not eligible.
- An individual cannot invest on behalf of HUF (Hindu Undivided Family) or Association of persons.
- Ideal investment option for both salaried as well as self employed classes.

#### 2.3.2.6 Post Office Time Deposit Scheme

**Salient Features:**

- 1 year, 2 year, 3 year and 5 year time deposits can be opened.
- Interest payable annually but compounded quarterly:

| Period | Rate of Interest |
|---|---|
| One Year | **8.2%** |
| Two Years | **8.3%** |
| Three Years | **8.4%** |
| Five Years | **8.5%** |

- Minimum amount of deposit is Rs 200/- and in multiples of Rs 200/- thereafter. No maximum limit.
- Investment up to Rs 1,00,000/- per annum qualifies for Income Tax Rebate under section 80C of IT Act.
- Interest income is taxable.
- Facility of redeposit on maturity of an account.
- In case of premature closure of 1 year, 2 Year, 3 Year or 5 Year account on or after 01.12.2011 between 6 months to one year from the date of deposit, simple interest at the rate applicable to from time to time to post office savings account shall be payable.
- 2 year, 3 year or 5 year accounts on or after 01.12.2011 if closed after one year, interest on such deposits shall be calculated at a discount of 1% on the rate specified for respective period as mentioned in the concerned table given under Rule 7 of Post office Time Deposit Rules.
- Account can be pledged as security against a loan to banks/ Government institutions.
- Any individual (a single adult or two adults jointly) can open an account.
- Group Accounts, Institutional Accounts and Misc. account not permissible.
- Trust, Regimental Fund or Welfare Fund not permissible to invest.

#### 2.3.2.7 Senior Citizen's Savings Scheme

**Salient Features:**

- Interest @ 9.2% per annum from the date of deposit on quarterly basis as on 01-04-2014
- Minimum deposit is Rs 1000 and multiples thereof. Maximum limit of 15 lakhs.
- Maturity period is 5 years and can be extended for a further period of 3 years.
- Age should be 60 years or more, and 55 years or more but less than 60 years who has retired under a Voluntary Retirement Scheme or a Special Voluntary Retirement Scheme on the date of opening of the account within three months from the date of retirement.
- No age limit for the retired personnel of Defence services provided they fulfill other specified conditions.
- The account may be opened in individual capacity or jointly with spouse.
- TDS is deducted at source on interest if the interest amount is more than Rs 10,000/- per annum.
- Investment up to Rs 1,00,000/- per annum qualifies for Income Tax Rebate under section 80C of IT Act.
- Interest can be automatically credited to savings account provided both the accounts stand in the same post office.
- Premature closure is allowed after one year on deduction of 1.5% of the deposit and after 2 years on deduction of 1%.
- No withdrawal permitted before the expiry of a period of 5 years from the date of opening of the account.

- Non-resident Indians (NRIs) and Hindu Undivided Family (HUF) are not eligible to open an account.

#### 2.3.2.8 Post Office Savings Account

**Salient Features:**

- Rate of interest 4.0% per annum
- Minimum amount Rs 50/- in case of non-cheque account, Rs.500/- in case of cheque account.
- Maximum balance permissible is Rs 1,00,000/- in a single account and Rs 2,00,000/- in a joint account.
- Interest Tax Free.
- Any individual can open an account.
- Cheque facility available.
- Group Account, Institutional Account, other Accounts like Security Deposit account & Official Capacity account are not permissible.

#### 2.3.2.9 Senior Citizen Scheme

- Senior Features Citizens Savings Scheme is launched for Citizens of 60 years of age and above. Citizens who have retired under a voluntary or a special voluntary retirement scheme and have attained the age of 55 years are also eligible, subject to specified conditions
- Maturity: Maturity period of the deposit will be five years, extendable by another three years.
- Returns: The deposit will carry an interest of 9% per annum
- Tax Considerations: Interest is liable to tax however there is No TDS from interest

## Activity B :

Collect the information about the saving schemes the post office along with their current rate of interest.

### 2.3.3 Insurance

Life is like a roller coaster ride and is full of twists and turns. You cannot take anything for granted in life. Insurance policies are a safeguard against the uncertainties of life.

Insurance system by which the losses suffered by a few are spread many, exposed to similar risks. Insurance is a protection against financial loss arising on the happening of an unexpected event. Insurance policy helps in not only mitigating risks but also provides a financial cushion against adverse financial burdens suffered.

Insurance policies cover the risk of life as well as other assets and valuable such as home, automobiles, jewelry et al. On the basis of the risk they cover, insurance policies can be classified into two categories:

1. Life Insurance Policies
2. General Insurance Policies

**1. Life Insurance:** Life is very fragile and death is certainly. We cannot control the uncertainties of life. But, we can cover the risks surroundings us. Life insurance, simply put, is the cover for the risks that we run during our lives. It protects us from the contingencies that could affect us. Life insurance is not for the person who passes away, it is for those who survive. It is the responsibility of every bread earner to guard against the events that could affect the family in the unfortunate circumstance of his/her demise. Thus, having a life insurance policy is very vital. Before going for a life insurance policy it is imperative that you know about various types of life insurance policies. Major among them are:

- Endowment Policy
- Whole Life Policy
- Term Life Policy
- Money-back Policy
- Joint Life Policy
- Group Insurance Policy
- Loan Cover Term Assurance Policy
- Pension Plan or Annuities
- Unit Linked Insurance Plan

The major advantages of life insurance of life insurance are given below:

**(i) Protection:** Saving through life insurance guarantees full protection against risk of death of the saver. The full assured sum is paid, whereas in other schemes only the amount saved is paid.

**(ii) Easy Payments:** For the salaried people the salary savings' schemes are introduced. Further, there is an easy installment facility method of payment through monthly, quarterly, half yearly or yearly mode.

**(iii)Liquidity:** Loans can be raised on the security of the policy.

**(iv)Tax relief:** Tax relief in income tax and wealth tax is available for amounts paid by way of premium for life insurance subject to the tax rates in force.

**2. General Insurance:** General Insurance provides much-needed protection against unforeseen events such as accidents, illness, fire, burglary et al. Unlike life insurance, general insurance is not meant to offer returns but is a protection against contingencies. Almost everything that has a financial value in life and has a probability of getting lost, stolen or damaged can be covered through general insurance policy.

Property (both movable and immovable), vehicle, cash house hold goods, health, dishonesty and also one's liability towards others can be covered under general insurance policy. Under certain acts of parliament, some type of insurances like motor insurance of public liability insurance has been made compulsory.

Major insurance policies that are covered under general insurance are:

- Home Insurance
- Health Insurance
- Motor Insurance
- Travel Insurance

## Activity C :

How many public and private players are there in life insurances sector in India.

## Activity D :

Collect the information on various scheme of Health Insurance provided by the general insurance companies in India.

### 2.3.4 Non-Banking Financial Company (NBFC) Deposits

A Non-Banking Financial Company (NBFC) is a company registered under the Companies Act, 1956 engaged in the business of loans and advances, acquisition of shares/stocks/bonds/ debentures/securities issued by Government or local authority or other marketable securities of a like nature, leasing, hire-purchase, insurance business, chit business but does not include any institution whose principal business is that of agriculture activity, industrial activity, purchase or sale of any goods (other than securities) or providing any services and sale/purchase/construction of immovable property. A non-banking institution which is a company and has principal business of receiving deposits under any scheme or arrangement in one lump sum or in installments by way of contributions or in any other manner, is also a non-banking financial company (Residuary non-banking company).

**Difference between Bank and NBFC**

NBFCs lend and make investments and hence their activities are akin to that of banks; however there are a few differences as given below:

- NBFC cannot accept demand deposits;
- NBFCs do not form part of the payment and settlement system and cannot issue cheques drawn on itself;
- Deposit insurance facility of Deposit Insurance and Credit Guarantee Corporation is not available to depositors of NBFCs, unlike in case of banks.

**Deposits under NBFC**

NBFC deposits are governed by the Companies Act under section 58A. These deposits are unsecured, i.e. if the company defaults, the investor cannot sue the company to recover his capital, thus making them a risky investment option. NGFCs are small organizations and have modest fixed and manpower costs. Therefore, they can pass on the benefits to the investor in the form of a higher rate of interest. NBFCs suffer from credibility crises. So be absolutely sure to check the credit rating. AAA rating is the safest. According to latest RBI guidelines, NBFCs and companies cannot offer more than 14% interest on public deposits. The main features of such deposits are as follows.

- **Interest Rate:** Differs according to maturity period higher than commercial bank on public deposit. There is disparity in the interest rate among the companies in accordance with the credit ratings and policies of the companies. Generally, companies with lower credit ratings offer higher interest rates to cover the risk.

- **Maturity Period:** Maturity period of these companies ranges from few months to five years. It varies from company to company.
- **Security of Deposit:** A Security deposit in these companies is much lower than deposits with banks.

## 2.4 Other Instruments

### 2.4.1 Mutual Funds

Mutual funds are investment vehicles that pool money from many different investors to increase their buying power and diversify their holdings. This allows investors to add a substantial number of securities to their portfolio for a much lower price than purchasing each security individually. Mutual funds are collections of stocks, bonds, and other financial assets that are owned by a group of investors and managed by a professional investment company.

Mutual funds provide many important benefits to investors; these benefits particularly apply to investors who are just beginning to invest. Since a mutual fund can include hundreds of different securities, the performance of the fund is not dependent on any single security: the risk is spread among the various securities. In most cases, a portfolio manager is assigned to monitor the performance of securities in the fund.

When you invest in a mutual fund, is like buying shares in the fund, in own a small percentage of the fund's entire portfolio. These shares are a fractional representation of the entire mutual fund's diversified holdings. The price of a share at any time is called the fund's net asset value, or NAV. When the value of the portfolio increases, the value of the investment also increases. If, however, the value of the fund decreases, the investment value will decrease as well.

The primary asset categories found in mutual funds are money markets, bonds, and/or stocks. Mutual funds may invest in a single asset class or a combination of all. Maintaining the weight of each category and the decision on when to buy or sell is the function of the mutual fund's manager(s). Typically, the fund category indicates the primary investments (holdings) of the fund. For example, a fund that holds 85% stocks, 10% bonds and 5% cash equivalents is typically categorized as a stock fund.

**The mutual funds are broadly classified into open-ended scheme and close-ended scheme.**

**Open ended Schemes:** The open ended scheme offers its units on a continuous basis and accept funds from investors continuously. Repurchase is carried out on a continuing basis thus, helping the investors to withdraw their money at any time. In other words, there is an uninterrupted entry and exit into the funds. The open-end schemes have no maturity period and they are not listed in the stock exchanges. Investor can deal directly with the mutual fund for investment as well as redemption. The open-end fund provides liquidity to the investors since the repurchase facility available. Repurchase price is fixed on the basis of net asset value of the unit.

**Close ended funds:** The close ended funds have a fixed maturity period. The first time investments are made when the close end scheme is kept open for a limited period. Once closed, the units are listed on stock exchange. Investors can buy and sell their units only through stock exchanges. The demand and supply factors influence the prices of the units. The investor's expectation also affects the unit prices. The market price may not be the same as the net asset value.

**Advantages of Mutual Funds**

1. **Diversification**. Mutual funds spread their holdings across a number of different investment vehicles, which reduces the effect any single security or class of securities will have on the overall portfolio.
2. **Expert Management**. Many investors lack the financial know-how to manage their own portfolio. However, non-index mutual funds are managed by professionals who dedicate their careers to helping investors receive the best risk-return trade-off according to their objectives.
3. **Liquidity**. Mutual funds, unlike some of the individual investments can be traded daily. Though not as liquid as stocks, which can be traded intraday, buy and sell orders are filled after market close.
4. **Convenience**. Choosing a mutual fund is ideal for people who don't have the time to micromanage their portfolios.
5. **Reinvestment of Income**. They allow the facility to reinvest the dividends and interest in additional fund shares. This gives an opportunity to grow the portfolio without paying regular transaction fees for purchasing additional mutual fund shares.
6. **Range of Investment Options and Objectives**. There are funds for the highly aggressive investor, the risk averse, and the middle-of-the-road investor – for example, emerging markets funds, investment-grade bond funds, and balanced funds, respectively. There are also life cycle funds to ramp down risk as you near retirement. There are funds with a buy-and-hold philosophy, and others that are in and out of holdings almost daily.

**Disadvantages of Mutual Funds**

Although mutual funds can be beneficial in many ways, they are not for everyone.

1. **No Control over Portfolio**. Investing in fund give up all control of portfolio to the mutual fund money managers who run it.
2. **Capital Gains**. In a mutual fund, you're taxed when the fund distributes gains it made from selling individual holdings – even if you haven't sold your shares. If the fund has high turnover, or sells holdings often, capital gains distributions could be an annual event.
3. **Fees and Expenses**. Some mutual funds may assess a sales charge on all purchases, also known as a "load" – this is what it costs to get into the fund. Plus, all mutual funds charge annual expenses, which are conveniently expressed as an annual expense ratio – this is basically the cost of doing business. The expense ratio is expressed as a percentage, and is what you pay annually as a portion of your account

value. The average for managed funds is around 1.5%. Alternatively, index funds charge much lower expenses (0.25% on average) because they are not actively managed. Since the expense ratio will eat directly into gains on an annual basis, closely compare expense ratios for different funds you're considering.

4. **Over-diversification**. Although there are many benefits of diversification, there are pitfalls of being over-diversified. Think of it like a sliding scale: The more securities you hold, the less likely you are to feel their individual returns on your overall portfolio. What this means is that though risk will be reduced, so too will the potential for gains. This may be an understood trade-off with diversification, but too much diversification can negate the reason you want market exposure in the first place.
5. **Cash Drag**. Mutual funds need to maintain assets in cash to satisfy investor redemptions and to maintain liquidity for purchases. However, investors still pay to have funds sitting in cash because annual expenses are assessed on all fund assets, regardless of whether they're invested or not.

### 2.4.2 Real Assets

#### 2.4.2.1 Gold and Silver

For ages, gold and silver have been considered as a form of investment. They are considered as best hedge against the inflation. This is a favorite form of investment amongst the rural and semi- urban population.

#### 2.4.2.2 Art

Paintings are the most sought after from an art. The prices in the art market are rising and this rise is expected to continue. If an investor likes to buy paintings as a form of investments he has to consider the following points.

a) Paintings of the young painters. The works of established painters are costly and scope for appreciation in their values is limited. But prices of the good quality paintings of the young painters may increase quickly

b) Should posses the basic idea o the painting. This is needed to decide the quality of the paintings. He should be able to judge the primary attributes of the paintings such as spontaneity, nature of strokes, color combination and originality.

c) The investor should have aesthetic sense because he may or may or may not be able to resell the paintings. Therefore when he possesses the art piece the investor should have a sense of fulfillment.

#### 2.4.2.3 Antiques

In western countries' investment in antique is more common than in India. The antique is an object of historical interest. It may be a coin, sculpture or any other object of olden days. The owner of the antique has to register himself with Archeological Society of India. The society, after examining the authenticity of the antique issues a "Certificate of Registration". Any dealings i.e. purchase and sale of antique should be informed to the society. The government has the right to buy the antique from the owner, if it wants to

keep it in the museum. In the case of investment, the investor has to be careful about the fake antique and the rise in the price of the antique is uncertain.

#### 2.4.2.4 Precious Stones

Diamonds, rubies, emeralds, sapphires and pearls have appealed to investors from times immemorial because of their aesthetic appeal and rarity. These stones have attracted interest because of their high percent value. The quality of these stones is basically judged in terms of carat, clarity etc. These stones only attract the affluent investors, who have skill in buying them. It is less appealing to the bulk of the investors due to the following reasons:

- They do not provide regular income
- There is no tax advantage associated with them
- They are not very liquid and trading commissions in them tend to be high
- The assessment of their value is tricky.

### 2.4.3 Real Estate

Real estate has historically been useful in a portfolio for both income and capital gain. Home ownership, in itself, is a form of equity investment, as is the ownership of a second or vacation home, since these properties generally appreciate in value. Other types of estate, such as residential and commercial rental property, can create income streams as well as potential long-term capital gains.

Real estate investments can be made directly, with a purchase in your own name or through investments in limited partnerships, mutual funds, or Real Estate Investment Trust (REIT). REIT is a company organized to invest in real estate. Shares are generally traded in the organized exchange.

Also, there are many kinds of investments. Some are very speculative while others are more conservative. The major classifications are:

- Residential House
- Commercial property
- Agriculture land
- Suburban land
- Unimproved land
- Improved real estate
- New and used real estate property
- Vacation homes
- Certified historic rehab structures
- Other income-producing real estate such as office buildings, shopping centers and industrial or commercial properties.
- Mortgage such as through certificates package and sold through entities.

**Advantages**

1. The potential for high return in real estate exists due, in part to the frequent use of financial leverage. Financial leverage is the use of borrowed funds, as in a long-term mortgage, to try to increase the rate of return that can be earned on the investment. When the cost of borrowing is less than what can be earned on the investment. When the cost of borrowing is less than what can be earned on the investment, it is considered 'favorable' leverage, but when the reverse is true, it is considered 'unfavorable' leverage.
2. There are potential tax advantages in real estate, as well. First, for personal use residential property, there is the opportunity to deduct interest paid (first and second homes, within limitations). There may also be a deduction for property taxes. If the property is income producing, other expenses may be deductible as well, such as depreciation, insurance, and repairs. Also, real estate can be traded or exchanged for similar kind of property on a tax-free basis. And lastly, if the sale of investment results in a profit, the gain is normally a capital gain.
3. It is considered as a good hedge against inflation.
4. Good quality carefully selected income property will generally produce a positive cash flow.
5. The owner can take gains from real estate through refinancing the property without having to sell the property. Real estate is advantageous in this respect, because good quality properties can be used to secure mortgage loans up to a relatively high percentage of current value.

**Disadvantages**

1. There is generally limited marketability in real estate, depending an the nature and location of the property.
2. There is also a lack of liquidity, in that there no guarantee that the property can be disposed of at its original value, especially if it must be done within a short period of time.
3. A relatively large initial investment often is required to buy real estate.
4. If ownership in investment property is held directly be the investor, there are many 'hands-on' management duties that must be performed.
5. Real estate is often considered high risk because it is fixed in location and character. It is particularly vulnerable to economic fluctuations such a interest rate changes and/or recession.
6. The tax reform Act of 1986 eliminated many of the previously-available tax advantages relating to real estate.

## 2.5 Summary

There are a large number of investment alternatives for investors in India. Some of them are marketable and liquid while others are more risky and less safe. Risk and return are the major characteristics which an investor has to face the handle.

The investment alternatives can broadly be categorized as under the following heads:

- Corporate shares, debentures and bonds
- Bank deposits
- Post office deposits, insurance and NBFCs deposits
- Real estate and Mutual Fund schemes

The investor has to choose proper alternatives from among them depending on his preferences, needs and abilities to take the minimum risk and maximum the returns. To enable investors to know the degree of risk on debt instruments credit rating is now made compulsory for them.

## 2.6 Self Assessment Questions

1. What are the various investment alternatives available for an investor?
2. Explain negotiable financial instruments in detail with suitable examples.
3. What do you mean by Non-negotiable financial instruments? How are these different from negotiable financial instruments? Explain.
4. 'Equity shares are a good investment'. Discuss.
5. What are the advantages of placing money in the bank deposits? Discuss some of the new innovative deposits in the banks.
6. Explain in brief the different types of post-office schemes.
7. 'A small investor should enter the stock market through the Mutual fund route'. Do you agree with this statement? Discuss.
8. Why do investors add real estate in their portfolio?
9. Examine the tax sheltered schemes available in the market.

## 2.7 Reference Books


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# Unit – 3 : Concept of Savings

## Structure of Unit



## 3.0 Objectives

After completing the unit you would be able to :

- Understand the concept of savings
- Examine the relationship between saving and economic growth
- Learn the pattern of investment
- Understand gross domestic savings and household sector savings in India.
- Analyse the trends of saving and investment in India.

## 3.1 Introduction

The concept of saving is one of the very important concepts in economics and finance. Economic objectives like price stability, maintaining high levels of income and employment and high rates of economic growth have a close relationship with the concept of saving. The concept of saving helps to analyse many macro-economic aspects such as fluctuations in economic activity between propensity and recession, the process of economic growth and the method of financing economic growth and the method of financing gross domestic capital formation.

## 3.2 Savings : Meaning

Savings denotes the gap between income and expenditure or consumption. Whatever is not consumed out of disposable income is savings. The economy's savings equation is: Savings = Personal Disposable income – consumption

The term personal disposable income means the amount of money an individual retains after he has made all his necessary expenditure. This money is usually kept in banks or used for investment through which the saver earns an interest income or investment returns. It is necessary for an individual or an economy to meet any unforeseen expense.

### 3.2.1 Some Useful Concepts on Savings

Savings is an important component of economic activity. The savings rate can accelerate as well as deter economic growth.

**a) Personal Savings:**

On an individual level, savings is calculated by a personal (or family) income less their consumption and tax paid. This is known as personal savings. Personal savings may be a result of binding contracts like pension schemes or any investment. Or, it may be an outcome of negative expectation about future income.

**b) National Savings**

On a macro level, aggregate savings of any economy is a much more complex calculation. The savings by a country is known as national savings. It is the summation of personal, business and state savings.

**c) Saving Vs Savings**

There is a significant difference between the terms 'saving' and 'savings'. The saving is a flow concept and refers to the addition of the stock of capital (wealth) that occurs over a period of time. Whereas savings refers to the holding of wealth in some form, usually financial claims at a point of time. Hence, savings is a stock concept.

### 3.2.2 Motives for Saving

There are several motives which induce- people to save. They can be grouped under two headings

a) Power to save
b) Will to save

**(a) Power to save:** Power to save depends upon the level of income which a person earns. In case of a nation, power to save depends on proper utilization of natural resources. It is because when the income is low, then almost the whole amount is spent on meeting the bare necessities of life, so saving is very nominal. But in case of high income, saving is also high because there is surplus income over consumption.

**(b) Will to save:** The willingness to save is influenced by subjective considerations.viz;

(i) **Foresight:** People save money as a provision against some unforeseen circumstances which might arise in the future. Few others accumulate wealth for their dependants. All these prudential considerations can be constituted under the heading foresight.

(ii) **Social and political considerations:** Wealth gives power over other men in the economic sphere and also political and social influence. The desire of prestige, power and respect in social sphere and political life actuates human being to save

(iii**) Temperamental considerations:** There some persons who save neither for their families nor for their own use but merely because they have acquired a sort of mania for accumulation of wealth for its own sake.

(iv) **Security of Life and Property:** If there is security of life and property in a country the saving is encouraged.

(v) **Facilities for Investment:** If facilities of profitable investment are available, then saving is stimulated.

(vi) **Monetary Stability:** Monetary stability also plays a very important part in inducing the people to save money. If people apprehended a sharp fall in the value of money, then saving is discouraged and if the value of money is expected to rise, the saving is encouraged.

### 3.2.3 Saving and the Rate of Interest

Interest rate is one of the very important factors which exercises influence on the volume of saving. Interest rate is defined as the opportunity cost of holding money in hands, i.e., the amount foregone for keeping the money in hand. It is the incentive that propels any person to deposit money in banks.

If the rate of interest is high, it generally, induces people to save more money and if it is low, the saving is discouraged. However, there are few people who will try to save more even when the interest rate is low or save less when the interest rate is high just to provide for themselves a certain annual income for their old age or for their dependants, .

For example, a man wishes to have an annual income of Rs. 4,000 after retirement If, we suppose the annual rate of interest is 10%, then he has to save Rs. 40,000, to get an income of Rs. 4,000. If the rate of interest falls down to 5%, then he has t0 save Rs, 80,000 to get the desired sum of Rs. 4,000. There will of course be many people who will go on saving whatever the rate of interest. Thus it can be said that saving is encouraged when the interest rate is high and discouraged when it is low.

### 3.2.4 Use of the Concept of Saving

The concept of saving helps to analyse many macro-economic aspects such as;

- Fluctuations in economic activity between propensity and recession
- The process of economic growth

- The method of financing economic growth and
- The method of financing gross domestic capital formation.

Changes or fluctuations in economic activity may occur when investment spending is greater or smaller than the savings at a given level of income. Moreover, the resources going into the productive process, i.e., capital formation, may have a direct relationship with economic growth. In other words, growth in economic activity may result either from widening the application of capital (capital widening) or intensifying its user, utilizing more capital per unit of labour and output ( capital deepening). Lastly, all economic activities; agriculture, industrial, or services depend on the availability of financial resources. These resources needed for economic growth must be generated. The amount of financial resources and the volume of capital formation depend upon the intensity and efficiency with which savings are encouraged, gathered and directed towards investment. An institutional mechanism i.e. the financial system performs this role to aid economic growth. As more saving moves through the financial system, financial depth increases.

## 3.3 Savings and Investment

Savings is often equated with investment in any economy. The savings from households, companies as well as government are transferred to those who require it for investment purposes via financial intermediaries like, banks and other financial institutions. Such investments generally contribute to economic growth by adding to the capital base of the nation.

When the term investment is used in economics, it refers to the expenditure incurred by individuals and businesses on the purchase of new plant and machinery, the building of new houses, factories, schools, construction of roads etc. It is in other words, in the acquisition of new physical capital. Investment can be called as the addition to the capital stock of the economy. In brief, it includes the following kinds of expenditures.

(a) Stocks or inventories: The inventories expenditures incurred by businesses on the purchase of new raw material, semi finished goods and on stock of unsold goods (inventories) are counted as investment.

(b) Fixed Capital: The expenditure made on new plants and machinery vehicles, houses facilities, etc. are also included in investment. In the words of J. M. Keynes Investment means real investment which refers to increase in the real capital stock of the economy.

### 3.3.1 Types of Investment

1. **Autonomous Investment**

Investment which does not change with the changes in income level is called as Autonomous or Government Investment.

The investment which is not influenced by changes in national income is called autonomous investment. In other words an autonomous investment is independent of the level of national income. As regards the size of autonomous investment, it is influenced by many basic factors Such as increase in population, manpower, level of technology, the role of interest, the expectations of future economic growth and the role of capacity utilization etc.

Autonomous Investment remains constant irrespective of income level, which means even if the income is low, the autonomous, Investment remains the same. It refers to the investment made on houses, roads, public buildings and other parts of Infrastructure. The Government normally makes such a type of investment.

2**. Induced Investment**

Investment which changes with the changes in the income level is called as Induced Investment. Investment in the economy is influenced by the income or output of the economy. The larger the national income, the higher is the investment. Induced investment is the change in investment which is induced by the change in the national income.

Induced Investment is positively related to the income level. That is, at high levels of income entrepreneurs are induced to invest more and vice-versa. At a high level of income, Consumption expenditure increases this leads to an increase in investment of capital goods, in order to produce more consumer goods.

3. **Financial Investment**

Investment made in buying financial instruments such as new shares, bonds, securities, etc. is considered as a Financial Investment. However, the money used for purchasing existing financial instruments such as old bonds, old shares, etc., cannot be considered as financial investment. It is a mere transfer of a financial asset from one individual to another. In financial investment, money invested for buying of new shares and bonds as well as debentures have a positive impact on employment level, production and economic growth.

4. **Real Investment**

Investment made in new plant and equipment, construction of public utilities like schools, roads and railways, etc., is considered as Real Investment. Real investment in new machine tools, plant and equipments purchased, factory buildings, etc. increases employment, production and economic growth of the nation. Thus real investment has a direct impact on employment generation, economic growth, etc.

5. **Planned Investment**

Investment made with a plan in several sectors of the economy with specific objectives is called as Planned or Intended Investment. Planned Investment can also be called as Intended Investment because an investor while making investment makes a concrete plan of his investment.

6. **Unplanned Investment**

Investment done without any planning is called as an Unplanned or Unintended Investment. In unplanned type of investment, investors make investment randomly without making any concrete plans. Hence it can also be called as Unintended Investment. Under this type of investment, the investor may not consider the specific objectives while making an investment decision.

7. **Gross Investment**

Gross Investment means the total amount of money spent for creation of new capital assets like Plant and Machinery, Factory Building, etc. It is the total expenditure made on new capital assets in a period.

**8. Net Investment**

Net Investment is Gross Investment less (minus) Capital Consumption (Depreciation) during a period of time, usually a year. It must be noted that a part of the investment is meant for depreciation of the capital asset or for replacing a worn-out capital asset. Hence it must be deducted to arrive at net investment.

## 3.4 Savings and Economic Growth

All economics operate with a stock of real and financial assets. Real assets may be tangible or intangible. Examples of tangible real assets are land natural resources, buildings, inventories, equipment, durables and infrastructure. Examples of intangible real assets are human capital, organizational systems and government. Every asset represents savings either by the owner himself or by lenders of surplus savings. Most of the real assets are financed through borrowings (suppliers of surplus savings). Financial assets, or claims, or securities, or instruments come into existence to enable transfer of savings for investment. Financial assets may be classified may be classified as equity instruments, the real and financial assets must interact for the process of process of capital formation to take place.

## 3.5 Types of Economic Units

In any economy, there are two types of economic units or entities-surplus-spending economic units and deficit-spending economic units.

**Surplus-Spending Economic Units**

These are units whose consumption and planned of cash balances or financial assets. The surplus savings that have is held in the form is, in fact, lending for productive investment. Such lending by the surplus-spending sector can be termed as demanding financial assets or supplying loanable funds. In India, the household sector is a net-

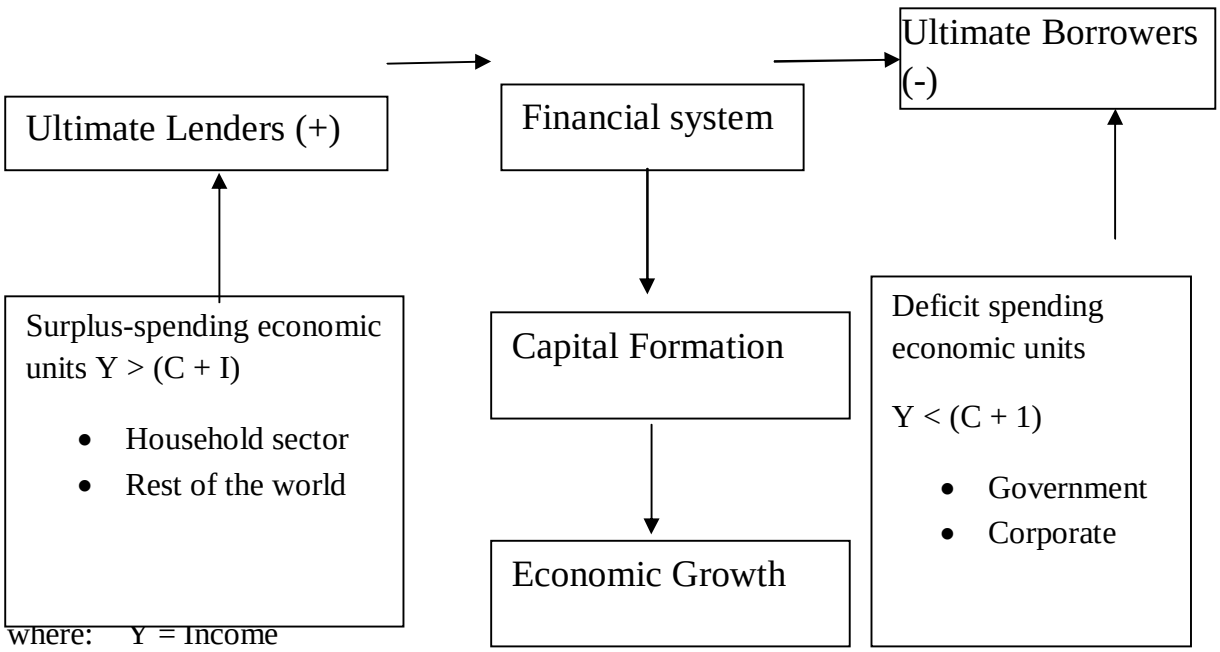
surplus spending economic unit. The household and other sectors are discussed in detail in the flow of funds analysis.

**Deficit-Spending Economic Units**

These are units whose consumption and planned exceeds income. The deficit-spending economic units have negative savings, they finance needs by borrowing or by decreasing their stock of financial assets. A borrowing by deficit-spending units creates a supply of financial securities or demand for loanable funds. In India, the government and the corporate sector are deficit-spending economic units.

The surplus savings of the surplus-spending household units have to be transferred to the surplus-spending economic units. A link in the form of a financial system is necessary to transfer surplus savings to deficit units. The surplus and deficit units can be brought together either directly through external financing or indirectly through intermediation (banks and other financial institutions).

Fig. 1.1 illustrates how surplus-spending economic units lend funds to the ultimate lenders.. This transfer of funds from the surplus-spending sector to the deficit-spending sector through the financial system leads to capital formation and economic growth, in the simple terms, is the real national product or output over time.




where: Y = Income
C = Consumption
I = Planned Investment

**Fig. 3.1 Saving and Economic Growth**

## 3.6 Components of Savings

### 3.6.1 Domestic saving primarily consist of three components, viz.

a) Household sector saving,
b) Private corporate sector saving and
c) Public sector saving.

Household sector saving constitutes the largest portion of gross domestic saving. Household sector saving comprises saving in financial assets and saving in physical assets. Household saving in financial assets (net) is estimated as gross financial assets net of financial liabilities, while household saving in physical assets is the net addition to physical assets by the households.

### Table 3.1 Gross Domestic Saving and Investment

| Item | Per cent of GDP at current market | | | | Amount in ` billion price | | |
|---|---|---|---|---|---|---|---|
| | Average 2003-04 to 2007-08 | 2009-10 | 2010-11 | 2011-12 | 2009-10 | 2010-11 SRE | 2011-12* |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1. Household Saving (Net) (a+b) | 23.2 | 25.2 | 23.5 | 22.3 | 16,308 | 18,329 | 20,037 |
| a) Financial Assets | 11.2 | 12.0 | 10.4 | 8.0 | 7,748 | 8,083 | 7,195 |
| b) Physical Assets | 12.0 | 13.2 | 13.1 | 14.3 | 8,560 | 10,246 | 12,842 |
| 2. Private corporate sector | 7.2 | 8.4 | 7.9 | 7.2 | 5,409 | 6,194 | 6,445 |
| 3. Public sector | 2.9 | 0.2 | 2.6 | 1.3 | 106 | 1997 | 1,171 |
| 4. Gross Domestic Saving | 33.3 | 33.7 | 34.0 | 30.8 | 21,823 | 26,519 | 27,653 |
| 5. Net capital inflow | 2.1 | 2.8 | 2.8 | 4.2 | 1,808 | 2,197 | 3,762 |
| 6. Gross Domestic Capital Formation (7+8) | 33.6 | 36.5 | 36.8 | 35.0 | 23,631 | 28,716 | 31,415 |
| 7. Errors and Omissions | 0.3 | 0.2 | -0.1 | -0.4 | 119 | -108 | -400 |
| 8. Gross Capital Formation | 33.4 | 36.3 | 37.0 | 35.4 | 23,513 | 28,824 | 31,814 |
| *of which :* | | | | | | | |
| a) Public sector | 7.8 | 9.2 | 8.4 | 7.9 | 5,928 | 6,540 | 7,052 |
| b) Private corporate sector | 12.5 | 12.1 | 13.4 | 10.6 | 7,861 | 10,410 | 9,491 |
| c) Household sector | 12.0 | 13.2 | 13.1 | 14.3 | 8,560 | 10,246 | 12,842 |
| d) Valuables # | 1.1 | 1.8 | 2.1 | 2.7 | 1,163 | 1,628 | 2,430 |
| *Memo:* | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Total Consumption Expenditure (a+b) | 69.8 | 69.1 | 67.2 | 68.0 | 44,788 | 52,409 | 60,989 |
| a) Private Final Consumption Expenditure | 59.0 | 57.2 | 55.8 | 56.3 | 37,076 | 43,499 | 50,562 |
| b) Government Final Consumption Expenditure | 10.8 | 11.9 | 11.4 | 11.6 | 7,712 | 8,910 | 10,427 |
| Saving-Investment Balance (4-6) | -0.3 | -2.8 | -2.8 | -4.2 | -1,808 | -2,197 | -3,762 |
| Public Sector Balance | -4.9 | -9.0 | -5.8 | -6.6 | -5,822 | -4,543 | -5,881 |
| Private Sector Balance | 5.9 | 8.3 | 4.9 | 4.6 | 5,296 | 3,867 | 4,149 |
| a) Private Corporate Sector | -5.3 | -3.7 | -5.5 | -3.4 | -2,452 | -4,216 | -3,046 |
| b) Household Sector | 11.2 | 12.0 | 10.4 | 8.0 | 7,748 | 8,083 | 7,195 |
| GDP at Market Prices (at current prices) | 100 | 100 | 100 | 100 | 64,778 | 77,953 | 89,749 |
| **SRE: Second Revised Estimates. *: First Revised Estimates.** | | | | | | | |

***Source: Central Statistics Office.***

- The net household savings increased to Rs 20,037 billion in 2011-12, from Rs 18,329 billion in 2010-11.
- While the gross financial savings of house hold sector increased to Rs 10,969 billion in 2012-13 from Rs 9,656 billion in 2011-12.
- The physical assets saw a rise from Rs 10,246 billion in 2010-11 to Rs 12,842 billion in 2011-12. However, it was the financial assets which saw a dip of Rs 888 billion.
- The gross domestic capital formation for households sector too saw a rise from Rs 8,716 billion to Rs 31,415 billion in 2011-12.
- In fact, financial savings of the household sector (gross) data too show a change in financial assets. Household sectors increased their investments in deposits in 2012-13 as compared to 2011-12, to Rs 6,170 billion from Rs 5,490 billion.

Although household sectors savings in commercial banks increased, savings with non-banking finance companies saw a marginal decrease. Shares and debentures also saw a rise in 2012-13 of Rs 344 billion as compared to – Rs 45 billion in 2011-12. Household sector continued to invest in mutual funds, but small savings still struggles as per the data published by the apex bank on its website. The same stands true for life funds of LIC and private insurance companies which were able to get just Rs1,799 billion in 2012-13 as compared to Rs1,905 billion in 2011-12.

**(a) Household Sector Saving**

This constitutes the largest portion of the gross domestic saving. Several factors, viz., economic, financial and other household specific ones explain the growth of household financial saving. The significant determinants of the household financial savings include, inter alia, the disposable income of the household; structure of interest rates, expected

inflation rate, development of the financial sector, etc. of these, the variation in interest rates is likely to have mainly the substitution effect on the portfolio allocation of household saving.

Substitution effect is the key to understanding the form in which the households would decide to save. In other words, the relative rate of return from alternative financial instruments would determine the decision of the constituents of the household sector to save in a given instrument.

In that case, one would expect that the portion of total savings held in a particular form would be based on the yield that the various other instruments would fetch. In fact, the disposable income of the household is a scale factor that influences the quantum of resources saved by the households. Hence it is essential to accelerate the growth of income. Household saving may also depend upon the growth of the financial markets.

The expansion of the banking network as an aftermath of bank nationalization resulted in tapping a large portion of household saving resources. This has been particularly important in the case of the rural areas, where bank deposits have emerged as an important instrument of saving. One may expect that with the dissemination of greater information regarding alternative instruments of saving, such as insurance funds, there can be further improvement in the long-term saving from the rural population. At present, various steps are being taken to raise the contractual savings of the household. The insurance sector is now open to private sector participation and private sector has become active in this field. Implementation of the schemes like Old Age, Social and Income

Securities (OASIS) will provide a fillip to savings. Besides, the Government of India has reportedly decided to convert the present pay as- you-go scheme into funded pension scheme. These measures are expected to increase the relative share of contractual savings and can help raise the saving rate of the economy.

**(b) Private Corporate Sector Saving**

The stagnation in the saving rate of the corporate sector can be attributed to lower profitability conditions associated with the slackening of industrial activity as well as the subdued capital market. In an emerging market driven economy, the competitive environment would put pressure on costs and hence may necessitate the adoption of competitive pricing policies by the private corporate sector. In such scenario, it may be difficult to raise revenue and profits through increase in prices. In view of this, it would be necessary to seek an increase in profitability mainly through improvement in quality and the adoption of cost effective measures by the private corporate sector.

The gross saving of the corporate sector comprises of retained profits and depreciation provision. The retained profits are derived from their income after accounting for various manufacturing and other expenses, and provisions including the provision for taxes.

Perhaps, further rationalization of the corporate tax structure could step up the savings of the sector. Secondly, depreciation is allowed on the fixed assets acquired by the companies from time to time. Exemptions on fixed assets at higher rates for providing the consumption of fixed capital could make the provision for depreciation to rise; thus making available larger amounts of funds for further investment in the fixed assets. The higher level of depreciation would increase saving rate and also investment rate.

It is observed in the past that the inventory-sales ratio was on declining trend during the late nineties. Corporate sector need to efficiently manage inventories on one hand and demand for industry's output need to rise from other segments of the economy on the other hand so as to improve the corporate sector profitability and thereby its savings.

**(c) Public Sector Saving**

The trends in public sector savings during the last three years of Ninth Plan emphasize the need for the rigorous fiscal discipline to be adopted during the tenth Plan. Fiscal management in the economy in recent times is constrained by high fiscal deficits due to revenue shortfall and expenditure overrun. Public sector savings rate declined in the eighties as well as in the nineties. The public sector savings declined mainly on account of a widening of revenue deficits in the Union and State budgets due to higher order of dis-savings of the Government administrative departments. Therefore, the improvement in public sector savings largely depends upon a turnaround in the current account of the Government sector and enhanced surplus generation by public sector undertakings. User charges need to be indexed to the increase in input costs. Drastic pruning of the expenditure incurred on subsidies will result in savings. Rationalization in the number of Government employees and re-deployment of employees need to be considered. Raising the gross tax to GDP ratio through buoyancy and expansion of the tax base be given priority. For stepping up of Government sector saving it is essential to eliminate the revenue deficit and bring down the gross fiscal deficit to minimal level. This would require strengthening of fiscal correction by means of moderation in expenditure growth and enhancing revenue buoyancy.

### 3.6.2 Financial Saving of the Household Sector

Gross financial saving of the household sector include the saving in the form of currency, bank deposits, non-bank deposits, saving in life insurance fund, saving in provident and pension fund, claims on government, shares and debentures inclusive of investment in mutual funds and net trade debt. Financial liabilities cover the loans and advances from banks, other financial institutions, government, and cooperative non-credit societies.

## Table: 3.2 Financial Saving of the Household Sector (Gross)

| Item | | Per cent to Gross Financial Saving | | | ` billion | | |
|---|---|---|---|---|---|---|---|
| | | 2010-11R | 2011-12R | 2012-13P | 2010-11R | 2011-12R | 2012-13P |
| 1 | | 2 | 3 | 4 | 5 | 6 | 7 |
| A. | Change in Financial Assets (Gross Financial Saving) | 100.0 | 100.0 | 100.0 | 10,799 | 9,565 | 10,969 |
| | a) Currency | 12.7 | 11.4 | 10.2 | 1,371 | 1,089 | 1,121 |
| | b) Deposits | 51.2 | 57.4 | 56.2 | 5,534 | 5,490 | 6,170 |
| | i) With Commercial Banks | 47.9 | 52.1 | 51.3 | 5,172 | 4,985 | 5,632 |
| | ii) With Non-banking Companies | 0.5 | 2.2 | 1.9 | 51 | 209 | 204 |
| | iii) With Cooperative Banks and Societies | 2.9 | 3.1 | 3.0 | 311 | 297 | 333 |
| | iv) Trade Debt (Net) | 0.6 | 0.5 | 0.3 | 68 | 45 | 32 |
| | c) Share and Debentures | 0.2 | -0.5 | 3.1 | 17 | -45 | 344 |
| | *of which :* | | | | | | |
| | i) Private Corporate Business | 0.6 | 0.4 | 0.4 | 68 | 41 | 39 |
| | ii) Banking | 0.1 | 0 | 0 | 8 | 1 | 0 |
| | iii) Bonds of public Sector undertakings | 0.1 | 0.1 | 0.1 | 8 | 11 | 15 |
| | iv) Mutual Funds (including UTI) | -1.1 | -1.1 | 2.5 | -116 | -106 | 274 |
| | d) Claims on Government | 2.7 | -2.8 | -0.8 | 295 | -272 | -90 |
| | i) Investment in Government securities | 0 | -0.2 | 0 | 3 | -18 | 5 |
| | ii) Investment in Small Savings, etc. | 3.3 | -2.3 | -0.9 | 361 | -218 | -94 |
| | e) Life Insurance Funds | 19.5 | 19.8 | 16.4 | 2,101 | 1,893 | 1,795 |
| | *of which :* | | | | | | |
| | i) Life Funds of LIC and private insurance companies | 19.4 | 19.9 | 16.4 | 2,095 | 1,905 | 1,799 |
| | f) Provident and Pension Funds | 13.1 | 14.3 | 14.6 | 1,411 | 1,364 | 1,596 |
| B. | Change in Financial Liabilities | | | | 2,780 | 2,818 | 3,228 |
| C. | Net Financial Saving of Household Sector | | | | 8,019 | 6,746 | 7,741 |

The small savings constitute one of the important instruments of household financial savings in India. The major components of small savings schemes comprise Post Office Saving Bank Accounts, Post Office Recurring Deposits, Monthly Income Scheme, and Post Office Time Deposits; National Savings Schemes; and National Savings Certificates, Public Provident Funds, and Kisan Vikas Patra.

The compositional shift in the small savings outstanding indicates the change in preferences towards instruments of medium to long maturity. For strengthening the savings of the household sector, it is important to pay attention to the mobilization of small savings. Some of the schemes have sizeable participation from middle and higher income groups.

Interest rates on tax saving schemes are set by the Government and to make these schemes attractive, rates have been kept typically above the commercial bank deposit rates of similar maturity. The scope of incentives to savings under the Income Tax Act has been gradually enlarged over the years. On various small savings instruments three types of tax incentives are given:

(i) the interest income earned from the instrument is exempt from income taxation under Section 80L available for Post Office Deposit Schemes and National Savings Certificates and National Savings Scheme, 1992

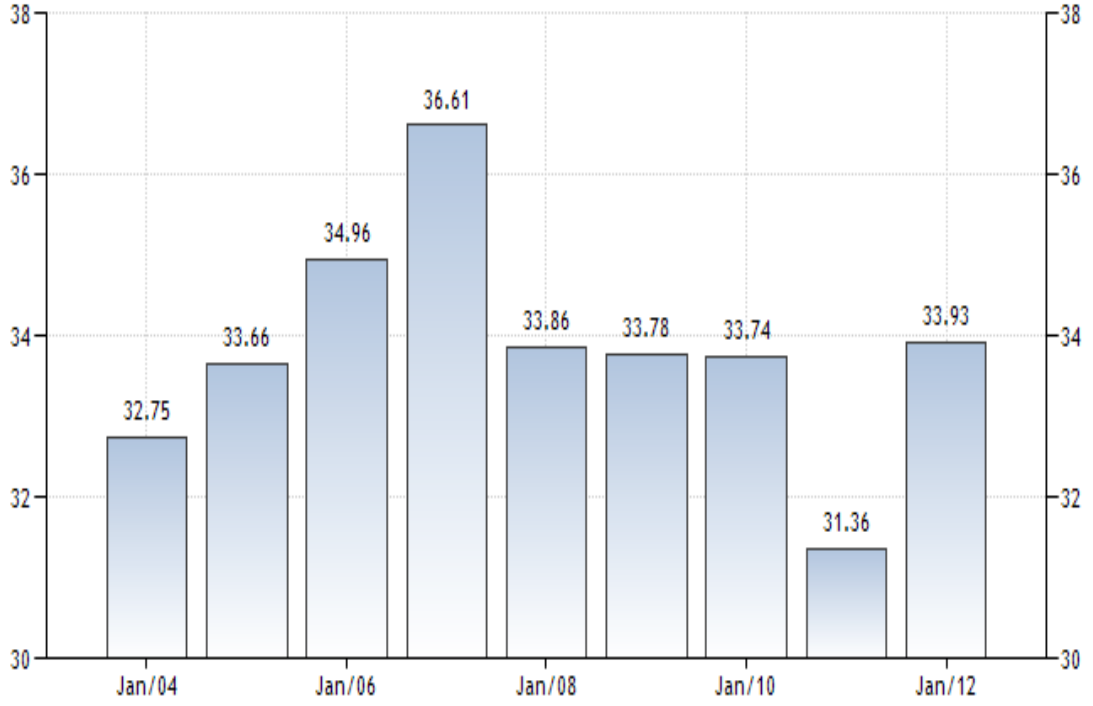
(ii) tax rebate equal to 20 per cent on deposits available under Section 88 for National Savings Certificates and

(iii) Withdrawals are completely exempt under Section 10 applicable to Post Office Savings Account, Public Provident Fund, and Deposit Scheme for Retiring Employees.

### 3.6.3 Gross Savings in India

**Table: 3.3**

**Percentage of Gross Saving**




Gross savings (% of GDP) in India was last measured at 31.36 in 2011, according to the World Bank. Gross savings are calculated as gross national income less total consumption, plus net transfers.

## 3.7 Trends in Savings and Investment

- Reserve Bank of India has projected that country's savings rate may rise to around 38-39% of GDP by the end of 12th Five Year Plan if economic growth returns to 8% level. The savings rate was 33.3% at the end of March 2012 The 12th Five Year Plan covers a period between 2012-13 and 2016-17.
- But there might be a risk of lower saving rate due to increasing retail credit penetration which led consumers to spend in anticipation of future income. Large shocks to growth and high inflation can also retard the saving rate
- While savings have been fluctuating since 2008 and has gone down sharply in 2011-12 compared to 2010-11, there has been a significant fall in financial savings from

10.4 percent from 2010-11 to 2011-12. During the same period savings in physical assets have gone up from 13.1 percent to 14.3 percent.

- Within households, the share of financial savings vis-à-vis physical savings has been declining in recent years. Financial savings take the form of bank deposits, life insurance funds, pension and provident funds, shares and debentures, etc.
- Financial savings accounted for around 55 per cent of total household savings during the 1990s. Their share declined to 47 per cent in the 2000-10 decade and it was 36 per cent in 2011-12. In fact, household financial savings were lower by nearly ` 90,000 crore in 2011-12 vis-à-vis 2010-11'.
- Shares and debentures accounted for 8.3 per cent of total financial savings in the1980s; their share increased to nearly 13 percent in the 1990s before declining to 4.8 per cent in the 2000s.
- The reason given for this decline is high volatility in the equity market. As per the survey, the poor flow of money in equity market is explained by high volatility.
- The survey also highlights the increasing trend in movement of money towards gold.
- The returns on the BSE Sensex halved to 10.7 per cent in the 2000s and volatility increased as can be seen from the higher value of the coefficient of variation at 60.1. Thus a combination of lower returns and higher volatility in the 2000s vis-à-vis the 1990s could have contributed to the reduced share of shares and debentures in total financial savings. This, coupled with high inflation, could also be one of the reasons why gold has become a 'safe haven' investment in recent times .
- Acquisition of gold by the households in the country tends to have a negative impact on savings and on household financial investments'

## 3.8 Summary

India's gross domestic savings rate has increased near-steadily over the Five-Year Plans and is among the highest in the world in the recent period. The recent savings rate of the country is comparable to Indonesia, Thailand and Korea but much lower than that of China, Malaysia and Singapore. Consumer states like the US and the UK had their savings rate as low as 11% levels in 2009, while the rate is 17% for France and 21.4% for Germany. Among emerging economies, Brazil had a low savings rate at 16.5%. while the country's household sector savings rate has stabilised, trends in private corporate sector savings and public sector savings have influenced the changes in the domestic savings rate in recent times.

## 3.9. Self Assessment Questions

1. Discuss the concept of saving. Explain the useful concept of savings
2. There is a close relationship between savings and economic growth. Critically examine
3. Explain surplus spending and deficit spending units of the economic.
4. Why should saving and investment be studied?
5. Examine the saving and investment trends in India.

## 3.10 Reference Books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- Srivastava R.M.: Financial Management, Pragati Prakashan Meerut.
- Gupta Shashi k. and Joshi Rosy :Security Analysis and portfolio management,Himalaya Publishing House New Delhi
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- Punithavath Pandian: Security Analysis and Portfolio Management, Vikas Publishing House New Delhi.

# Unit-4 Security Valuation

## Structure of Unit



## 4.0 Objectives

After completing the unit you would be able to :

- Understand the meaning of security.
- Understand the models used for security valuation.
- Kwon the concept of valuation.
- Understand board or debenture valuation.
- Point out common stock or equity share valuation.

## 4.1 Introduction

The world security may be defined as, ‘an instrument of promissory note or a method of borrowing or lending or a source of contributing ot the funds needed by a corporate body or a non-corporate body.’ In legal sense also security can be defined as, ‘inclusive of shares, scrips, stocks, bonds, debentures or any other marketable securities of like nature in or of any debentures of a company or a corporate body, government or semi-government body, etc.’ It includes all rights and interests, including warrants, loyalty coupons, etc. issued by any of the bodies organisations or the government.

## 4.2 Meaning of Security

A simple definition of a security is any proof of owner ship or debit that has been assigned a value and may be sold. (Today, evidence of ownership is likely to be a computer file, while once it was a written piece of paper.) For the holder, a security represents an investment as an owner, creditor or rights to ownership and which the person hopes to gain profit. Examples are stocks, bonds and options.

**The securities and Exchange Act of 1934** provides the more complicated definitions. The term, security means any note, stock treasury stock, bond debenture certificate of interest or participation in any profit sharing agreement or in any oil, gas or other mineral royalty or lease any collateral trust certificate, certificate of deposit ,for a security any put, call straddle option or privilege all any security, certificate of deposit or group or index of securities.

## 4.3 What is Valuation?

The process of determining the current worth of asset or company. There are many techniques that can be used to determine value, some are subjective are others are objectives.

In fences, valuation is the process of estimating what something is worth. Items that are usually valued are a financial asset or liability. Valuation can be done on assets (for example, investments in market table security such as stock options, business enterprise or intangible asset such as patents and tread mark.) or in liabilities. Valuations are needed for many reasons such as investment, analysis capital budgeting merger and acquisition transactions financial reporting, taxable events to determine the proper tax liability and in litigation.

**Valuation of finance assets is done using one or more of these types of models**

I. **Absolute value model that determine the present value of an asset's expected future cash flows**.

These kinds of models table two general from multi- period models such as discounted cash flow models or single period models such as the Gordon model. These models rely on mathematics rather than price observation.

II. **Relative value**

Models determine value based on the observation of market price of similar assets.

III. **Option pricing model**

Are used for certain type of financial assets warrants, put option call option, embedded option such as a callable option are a complex present value model .The most common option pricing models are the blank schools- Merton models and lattice value.

## 4.4 Valuation of Securities

The objective of a firm is the maximize shareholder's wealth which is represented by the product of number of share and the current market price per share:

$$W_O = N \times P_o$$

Given the number of shares that the shareholder owns, the higher the stock price per share, the greater will be the stockholder's wealth .Thus, the financial objective of a firm is to maximize the market value per share in the market .To maximize the stock price, we have to develop a valuation model and identify the variables that determine the stock price .Generally speaking, the Value of the firm depends upon two things: (i) The rate of return and (ii) the element of risk. The concept of return refers to profits that the firm can earn for the stockholder, and the concept risk refers to the UN certainty of this profits.

$$V = f(r, \sigma)$$

Where V represents the market price per share, r is the return characteristic and σ is the risk characteristic of the firm, AS the return and risk characteristics of a firm are influenced by the three financial Decisions, namely, (i) Investment decisions, (ii) Financing decisions, and(iii)Divided decisions; the value of the firm can be represented as the following valuation model:

$$V = g\ (IFD)$$

## 4.5 Concept of Value

The term value has been used to convey a variety of meanings. The different meanings of value are useful for different purposes. The various concepts of value are discussed below:

### 4.5.1 Book value

Book value of a security is an accounting concept. The book value of an equity share is equal to the net worth of the firm divided by the number of equity share, where the net worth is equal to equity capital pulse free reserves. The market value may fluctuate around the book value but may be higher if the future prospects are good

### 4.5.2 Market value

The market value of an asset or security is the value at which it can be sold at present. It is argued that actual market prices are appraisals of knowledgeable buyers and sellers who are willing to support their opinions with cash. Market price is a definite measure that can readily be applied to a particular situation and it minimizes the subjectivity of other methods in favour of a known yardstick of value**.**

### 4.5.3 Going Concern Value

In the valuation process the valuation of shares in done on the going concern basis .In a going concern ,we assess the value of an existing mixture of assets which provide a stream of income .The going concern value is the price which a firm could realise if it is

sold as an operating business .The going concern value will always be higher than the liquidation value .The difference between these two value will be due to value of organization , reputation etc .we may command goodwill if the concern is sold as a going con

**Example**

if the future maintainable profits of a firm are estimated to be Rs.5,00,000 per annum and the expected normal rate of return (capitalization rate)is 10%,the going concern value of the firm than would be: 5, 00,000 x100/10=Rs.50, 00,000

### 4.5.4 Liquidation Value

If the assets are valued at their breakdown value in the market and take net fixed assets plus current assets minus current liabilities as if the company is liquidated, then divide this by the number of shares, the resultant value is the liquidating value per share .This is also an accounting concept.

### 4.5.5 Replacement Value

When the company is liquidated and its assets are to be replaced by new ones, their prices being higher, the replacement value of share will be different from the break down value some analysts take this replacement value to compare with the market price.

### 4.5.6 True concept of value

A business enterprise keeps or uses various assets because they generate cash inflows. Value is the function of cash inflows and there timing and risk. When cash in flows are discounted at the required rate of return to account for their timing and risk, be get the fair value or the present value of the asset. In financial decision making such as valuation securities, it is the present value concept which is relevant symbolically:

$$V_0 = C_1/(1+K)^1 + C_2/(1+K)^2 + C_3/(1+K)^3 + \text{----} C_n/(1+k)^n$$

$$= \sum_{t=1}^{n} = C_1/(1+K)^t$$

Where,

$V_0$= Value of the asset at time zero

$C_1$ , $C_2$ ,$C_3$ = Expected cash flow in period 1, 2, 3, and so on.

k = Discount rate applicable to cash flows.

n = Expected life of the asset.

t = Time period

**Example**

An investor who uses a 10 percent discount rate would value an asset that is expected to provide annual cash inflow of Rs. 1000 per year for the next ten years as being worth Rs. 6145, as calculated below:

$V_0 = \sum 1000/t = (ADF_{10\%}, 10 \text{ year})$

$t = 1(1.10)^t$

$= 1000 * 6.145$

$= Rs.6, 145$

## 4.6 Bond or Debenture Valuation

A bond is an instrument of debt issued by a business house or a government unit.The bonds may be issued at par, premium or discount .The par value is the amount stated on the face of the bond .it states the amount the firm borrows and promises to repay at the time of maturity. The bonds carry a fixed rate of interest payable at fixed intervals of time .The interest is calculated by multiplying the value of bonds with the rate of interest. Bond valuation is, generally, called debt valuation because the features that distinguish bonds form other debts are primarily non-financial in nature .Since bonds have a promised payment stream ,they are less risky as compared to the share .But it does not mean that they are totally risk free .Therefore ,the required rate of return on a firm's bond will exceed the risk free interest rate but will be less than the required rate of return on shares .The differences in required rates of return among bonds of different companies is caused by differences in 'default risk' . The value of the bond depends upon the discount rate .It will decrease with every increase in discount rate.

For the purpose of valuation, bonds may be classified into two categories:

**a) Bonds With a Maturity Period**
**b) Bonds in Perpetuity**

**a) Bonds with a Maturing Period**

When the bonds have a definite maturity period, its valuation is determined by considering the annual interest payments plus its maturity value. The following formula can be used to determine the value of a Bond:

$$V_d = R_1/(1+k_d)^1 + R_2/(1+k_d)^{2\cdots\cdots\cdots} R_n/(1+k_d)^n + M_n/(1+k_d)^n$$

$$= \sum_{t=1}^{n} R_t/(1+k_d)^t + M_n/(1+k_d)^n$$

Wither,

$V_d$ = Value of bond or debt

$R_1, R_2$..... = Annual interest ($_{Rs}$.) in period 1,2.....and so on

$K_d$ = required rate of return

M = Maturity value of bond

N = Number of year to maturity

It must be observed form the above equation that as n become large it become difficult to calculate $(1+k_d)$".We can make use of present value tables given at the end of the chapter to simplify our calculations.

Symbolically:

$$V_d = (R)\ (ADF_{i,n}) + (M)(DF_{i,n})$$

**Illustration 1**

An investor is considering the purchase of a 8% Rs.1000 bond redeemable after 5 years at par. The investor's required rate of return is 10%.What should he be willing to pay now to purchase the bond?

**Solution**

$$V_d = R_1/(1+K_d)^1 + R_2/(1+K_d)^2 + ....R_n/(1+k_d)^n + M_n/(1+k_d)^n$$

$$= 80/1.10 + 80/(1.10)^2 + 80/(1.10)^3 + 80/(1.10)^4 + 80/(1.10)^5 + 1{,}000/(1.10)^5$$

Using the present value Tables, we can calculate the same as below:

**Table 4.1**

| Year | Cash Flows | Present Value Factor of at 10% | Present Value of cash flows |
|---|---|---|---|
| 1 | 80 | .909 | 72.72 |
| 2 | 80 | .826 | 66.08 |
| 3 | 80 | .751 | 60.08 |
| 4 | 80 | .683 | 54.64 |
| 5 | 80 | .621 | 49.68 |
| 5 = | 1000 | .621 | 621.00 |

Total Present Value of Cash Flows = 924.20
He should be willing to pay Rs. = 924.20)
We can also calculate the value of bond by using Annuity Present Value or Annuity Discount Factor Tables, as below:

$$V_d = (R)(ADF_{i,n})+(M)(Df_{i,n})$$
$$= 80\ 3.791) + 1{,}000\ (.621)$$
$$= Rs.303.28+621$$
$$= Rs.\ 924.28$$

#### 4.6.1.1 Bond Redeemable in Installments

A company may issue a bond or debenture to be redeemed periodically. In such a case principal amount is repaid partially each period instead of a lump sum at maturity and hence goes on decreasing each period at it is calculated on the outstanding amount of bond/debenture. The value

of such a bond can be calculated as below:

$$V_d = R_1+P_1/(1+K_d)^1 + R_2+P_2/(1+K_d)^2+.....R_n+P_n/(1+k_d)^n$$

$$\text{or, } V_d = \sum_{t=1}^{n} R_t+P_t/(1+k_d)^t$$

Where,

$V_d$ = Value of bond or debt
$R_1,R_2....$ = Annual interest (Rs.) in period 1,2.....and so on.
$P_1,P_2....$ = Periodic payment of principal in period 1,2,.....and so on.
$K_d$ = required rate of return
$_n$ = Number of years to maturity

**Illustration 2**

A Company is proposing to issue a 5 year debenture of Rs.1000 redeemable in equal installments' at 14 %Rate of interest per annum .If an investor has a minimum required rate of Return of 12

Percent, calculate the debenture's present value for him. What should he be willing to pay now to purchase the debenture?

**Solution**

**Table 4.2**

| Calculation of Annual Interest and Cash Flows | | | | |
|---|---|---|---|---|
| **Year ( 1)** | **Amount Outstanding (2)** | **Interest(R) (3)** | **Principal payment (4)** | **CashFlows5= (3+4)** |
| 1 | Rs.1000 | 1000x14/100=Rs.140 | Rs.200 | Rs.340 |
| 2 | (1000-200)=800 | 800x14/100=Rs.112 | 200 | 312 |
| 3 | (800-200)=600 | 600x14/100=Rs.84 | 200 | 284 |
| 4 | (600-200)=400 | 400x14/100=Rs.56 | 200 | 256 |
| 5 | (400-200)=200 | 200x14/100=Rs.28 | 200 | 228 |

Present value of Debenture,

$$V_d = R_1 + P_1/(1+K_d)^1 + R_2 + P_2/(1+K_d)^2 + R_3 + P_3/(1+K_d)^3 + R_4 + P_4/(1+K_d)^4 + R_5 + P_5/(1+K_d)^5$$

$$= 140 + 200/1.12 + 112 + 200/(1.12)^2 + 84 + 200/(1.12)^3 + 56 + 200/(1.12)^4 + 28 + 200/(1.12)^5$$

Using the present Value Tables, we can calculate the same as below:

**Table 4.3**

| Year | Cash Flows Rs. | P.V. Factor at 12 % | Present Value of cash Flows |
|---|---|---|---|
| 1 | 340 | 0.893 | 303.62 |
| 2 | 312 | 0.797 | 248.66 |
| 3 | 284 | 0.712 | 202.21 |
| 4 | 256 | 0.636 | 162.82 |
| 5 | 228 | 0.567 | 129.28 |
| Present value of Debenture = 1,046.59 | | | |

As the present value of debenture is Rs.1046.59, the investor should be willing to pay Rs. 1,046.59

**b) Bonds in Perpetuity**

Perpetuity bonds are the bonds which never mature or have infinitive maturity period. Value of such bonds is simply the discounted value of infinite streams of interest (cash) flows.

Symbolically.

$$V_d = R_1/(1+k_d)^1 + R_2/(1+K_d)^2 ..... R_\infty/(1+K_d)^\infty$$

$$= \sum_{t=1}^{\infty} R_t / (1+k_d)^t$$

| Or, $V_d = R/K_d$ |
|---|

Where,

$V_d$ = Value of bond or debt
$K_d$ = Required rate of return
$R_1$ = Interest at period 1
$R_2$ = Interest at period 2
R = Annual Interest (as interest is constant)

**Illustration 3**

Mr. A has a perpetual bond of the face value of Rs.1; 000.He receives an interest an interest of Rs.60 annually. What would be its value if the required rate of return is 10%?

**Solution**

| **$V_d = R/K_d$** |
|---|
| **= 60/.10** |
| **= Rs. 600** |

### 4.6.3 Relationship between the Required Rate of Return and Coupon Interest Rate

We have observed earlier that the value of a bond or debenture is influenced by the coupon or fixed rate of interest payable on the bond and the investor's required or desired rate of return.

The relationship between the required rate of return and the coupon interest rate can, thus, be summarised as below:

(i) If the investor's required rate of return and the coupon interest rate are the same, the value of the debt shall be equal to its face value or paid-up value, as the case may be.

(ii) If the required rate of return is higher than the interest rate payable on bond or debenture, the value of the bond shall be lower than its face or paid-up value.

(iii) If the required rate of return is lower than the interest rate payable on bond or debenture, the value of the bond shall be higher than its face or paid-up value.

The above relationship can be explained with the help of following illustration.

**Illustration 4**

Face value of a debenture = Rs. 1,000
Annual Interest rate of Debenture = 12%
Maturity period = 5 years
What is the value of the debenture, if:

(a) Required rate of return is 12%
(b) Required rate of return is 15%

$V_d = (R)(ADF_{i,n})+(M)(DF_{i,n})$
$V_d = 120(3.605) +1000(.567)$
Or Vd = 432.60+567
= 999.60 or say Rs.1000
(a) $V_d = 120(3.352) +1000(.497)$
= 402.24+497
= 899.24
(b) $V_d = 120(3.791) +1000(.621)$
= 453.92+621
= Rs.1075.92or say Rs.1076

### 4.6.4 Bond Value with Semi-Annual Interest Rate

We have so far determined the valuation of debentures considering the annual interest payments For the sake of simplicity. However, in most of the cases, interest is payable on semi-annual or Half yearly basis. To determine the value of such bonds/debentures, the bond valuation equation Has to be modified on the following lines:

(1) The annual interest amount, R, should divided by 2 to find out the amount of half yearly interest
(2) The maturity period, n, should be multiplied with 2 to get the number of half yearly periods.
(3) The required rate of return, $K_d$, should be divided 2 to get an appropriate discount rate applicable to Half-yearly periods.

Thus, the basic bond valuation equation as modified would be:

$$V_d = \sum_{t=1}^{2n} R_1/2/(1+K_d/2)+(M_{2n})/(1+k_d/2)^{2n}$$

or, $V_d = [R\backslash 2](ADF_i/2,_{2n})+M(Df_i/2,_{2n})$

**Illustration 5**

An investor holds a debenture of Rs.100 carrying a coupon rate of 12%p.a. The interest is
Payable half-yearly on 30th June and 31st December every year. The maturity period of the
Debenture is 6 years and it is to be redeemed at a premium of 10%.The investor's required
Rate of Return is 14%p.a. compute the debenture.

**Solution**

$V_{d=}$ $(R/2)(ADF_{i/2.2n})+M(DF_{i/2.2n})$

= 12/2(7.943)+110(.444)
= 47.658+48.840
= Rs.96.498orsayRs.96.50

### 4.6.5 Yield to Maturity or Bond's Internal/Rate of Return

We have so for assumed that the investor's required rate of return, also called the discount rate, is given for calculating the value of the bond/debenture. However, in many cases, we may be required to calculate the required to calculate the required rate of return when the cash inflows and the current value/price of the bond is given .This rate also known as `yield to maturity' or `the internal rate of return' for the bond can be calculated by solving the following basic equation:

$$V_d = R_1/(1+K_d)^1+R_2/(1+K_d)^2+..... R_n/(1+k_d)^n$$

**Example**

Suppose that the current value of a 8%debenture, of Rs.1000 redeemable after 5 years at par, is Rs.924.28.The yield to maturity or the internal rate of return con be calculated as below:

$$\mathbf{924.28 = 80/(1+k_d)^1+80/(1+k_d)^2+80/(1+k_d)^3+80/(1+k_d)^4+80/(1+k_d)^5}$$

We can find the value of $K_d$ equal to 10 percent from the above equation by trying several values of $K_D$ by hit and trial method. However, the approximate value of yield to maturity can also be

Found by using the following simple formula:

$$Y_{dm} = \frac{I+(F-V)/n}{0.4F + 0.6V}$$

**Where,**

I = Annual interest payment
F = face value of bond/debenture
V = Current value/price of bond

n = Number of years to maturity

Thus, in the above example, the yield to maturity can be calculated as:

$$Y_{dm} = \frac{80+(1000-924.28)/5)}{[4/10x1000]+[6/10x924.28]}$$
$$= 95.14/954.57$$
$$= 10\% \text{ (appx.)}$$

In case of perpetual or irredeemable bond/debenture, the yield to maturity can be calculated by using the following simple equation

$$V_d = R/K_d \text{ or } k_d = R/V_d$$

Where,

$V_d$ = value of debenture
R = Annual interest payment
$K_d$ = required rate of return or yield to maturity.

**Illustration 6**

Mr. A has a perpetual bond of the face value of Rs.1000. He receives an interest of Rs.60 annually. Its Current value is Rs.600.What is the yield to maturity?

**Solution**

$$V_d = R/K_d$$
Or $K_d = R/V_d$
Or $k_d$
Thus, the yield to maturity is 10%

### 4.6.6 Valuation of Zero Coupon/Deep Discount Bond (DDBs/ZCBs)

The deep discount bond does not carry any interest but it is sold by the issuer company at deep discount from its eventual maturity (nominal) value. The Industrial Development Bank of India (IDBI) issued such DDBS for the first time in the Indian capital market at a price of Rs. 2700 against the nominal value of Rs. 1, 00, 000 payable after 25 years. Since there is no intermediate payment of interest between the date of issue and maturity date, the DDBS may also be called zero coupon bonds (ZBBs).

The valuation of a deep discount bond can also be made in the same manner as that of the ordinary bond or debenture .The only point to remember is that there shall be only one cash flow at the time of maturity in case of a deep discount bond . Thus, the value of a DDB may be taken as equal to the present value of this future cash flow discount at the required rate of return of the investor for number of years equal to the life of the bond.

The following formula can be used to determine the value of a DDB:

$$V_{ddb} = FV / ( 1 + r_n)$$

Where,

$V_{ddb}$ = value of a deep discount bond
FV = Face value of DDB payable at maturity
r = required rate of return
n = Number of years to maturity / Life of DDB.

We can also make use of the present value tables to simplify our calculations.
Symbolically:

$$V_{ddb} = (FV)*(Df_{i,n})$$

**Illustration 7**

A deep discount bond (DDB) is issued for a maturity period of 20 years and having a face value of Rs.1, 00,000. Find out the value of the DDB if the required rate of return is 10%.

**Solution**

$V_{ddb} = FV/(1+r)^n = (FV)*(Df_{i,n})$
$= 100000 / (1+.10)20$
$= (1, 00,000)*(.14864)$
$=$Rs.14864.

## Activity A:

An investor is considering the purchase of a 12%Rs. 1000 debenture redeemable after 5 years at Par. The investor's required rate of return is 14%.What should he be willing to pay now to purchase the debenture?

**[Ans.Rs.930.96]**

## Activity B :

Mr. has a perpetual bond of the face value of Rs.1000.He receives an interest of Rs.90 Annually. What would be its value if the required rate of return is 15%?

**[Ans.Rs.600]**

## 4.7 Preferred Stock or Share Valuation

Preference share is a hybrid security having features of both equity and debt. A fixed rate of dividend is paid on preference share. Dividend on preference share is payable out of profits after paying interest on debt but before paying dividend on equity shares. A preference share is also preferred in repayment as compared to equity share. Thus, preferred share is more risky than the bond but less risky than the equity share. The required rate of return on preferred stock is, therefore, greater than that of bonds.

Preferred stock or share can be with a maturity period or redeemable after a certain period or with perpetuity having no maturity period. The valuation of a preference share is very much similar to the valuation of a bond. The following formulas can be applied to find the value of the preference share.

### 4.7.1 Value of a Redeemable Preference Share

$$V_d = d/(1+k_p)^1+d/(1+k_p)^2+.....d/(1+k_p)^nP_n/(1+k_P)^n$$

Where,
$V_d$ = Value of preference share
d = Annual dividend per preference share
$P_n$ = Maturity or redemption price of preference share
$K_p$ = required rate of discount on preference share

**Illustration 8**

Mr. A is considering the purchase of a 7% preference share of Rs.1000 redeemable after 5 years at par. What should be willing to pay now to purchase the share assuming that the required rate of return is 8%?

**Solution**

$$V_p = d/(1+k_p)^1 + d/(1+k_p)^2 +.....d/(1+k_P)^n+P_n/(1+ k_p)^n$$

$$= 70/1.08+70/(1.08)^2+70/(1.08)^3+70/(1.08)^4+70/(1.08)^5+ 1000/(1.08)^5$$

Using the present value tables, we can calculate the same as below:

**Table 4.3**

| Year | Cash Flows Rs. | P.V Factor at 8% | Present value of cash flows Rs. |
|---|---|---|---|
| 1 | 70 | 0.926 | 64.82 |
| 2 | 70 | .857 | 59.99 |
| 3 | 70 | .794 | 55.58 |
| 4 | 70 | .735 | 51.45 |
| 5 | 70 | .681 | 47.67 |
| 5 | 1,000 | .681 | 681.00 |

Total Present value of Cash Flows or value of preference share 960.51

### 4.7.2 Value of a Preference Share

If the Preference share has no maturity date or is irredeemable and the future dividends are expected to be constant, the value can be calculated as below:

$$V_P = d/k_P$$

Where,

$V_P$ = Value of preference share
d = Constant annual dividend
$K_P$= Required rate of return on preference share

**Illustration 9**

Mr. A has a irredeemable preference share of Rs.1, 000.He receives an annual dividend of Rs.80 annually. What will be its value if the required rate of return is 10%?

**Solution**

$V_P = d/ k_p$
$= 80/0.10$
$= Rs.800$

## 4.8 Common Stock or Equity Share Valuation

The valuation of common stock or equity shares is relatively difficult as compared to the bonds or, preferred stock. The cash flows of the latter are certain because the rate of interest on bonds and the rate of dividend on preference shares is known. The cash flows expected by investors on common stock are uncertain. The earnings and dividends on

equity shares are expected to Grow. However, we can determine the value of equity shares (i) by developing certain models Based on capitalisation of dividend, and (ii) capitalisation of earnings

### 4.8.1 The basic valuation and dividend capitalisation models.

The value of an equity share is a function of cash inflows expected by the investors and the risk Associated with the cash inflows. The investor expects to receive dividend while holding the Shares and the capital gain on sale of shares. The value of an equity share, in general, in the Present value of its future stream of dividends. Now, let us develop this idea in the form Valuation models .let us develop this idea in the form valuation models.

### 4.8.2 One-Period Valuation Model

Suppose an investor plans to buy an equity share to hold it for one year and then sell. The value of the share for him will be the present value of the expected sale price at the end of the year.

Symbolically:

$$P_0 = D_1/1+K_e + P_1/1+K_e$$

Where,

$P_0$ = Current value of the share

$D_1$ = Expected dividend at the end of year 1

$P_1$ = Expected price of share at the end of year 1

$K_e$ = the required rate of return on equity or the capitalisation/discount rate.

**Illustration10**

Mr. X is planning to buy an equity share, hold if for one year and then sell it. The expected

Dividend at the end of year 1 is Rs. 7 and the expected sale precedes Rs. 200 after 1 year.

Determine the value of the share to investor assuming the discount rate of 15% .

**Solution**

$$P_O = D_1/ (1+K_e) + P_1/ (1+K_e)$$
$$= 7 / 1.15 + 200 / 1.15 = 207 / 1.15$$

### 4.8.3 Two-Period Valuation Model

Suppose now that the investor plans to hold the share for two years and then sell it. The value of these hare to the investor today would be:

$$P_O = D_1/(1+K_e)+D_2/(1+K_e)^2 + P_2/(1+K_e)^2$$

Where, $D_2$ = Dividend expected at the end of year 2 and

$P_2$ = Expected Selling price at the end of year 2.

**Illustration11**

Mr. X is planning to buy an equity share, hold it for 2 years and then sell it. The expected Dividend at the end of year 1 is Rs.7 and Rs.7.50 at the end of year 2. The expected selling price Of the share at the end of year 2is Rs.220.calculate the value of the share today taking 15% Discount rate.

**Solution**

$$P_0 = D_1 / (1+K_e)+D_1 / (1+K_e)^2 +P_2 /(1+K_e)^2$$

$$= 7 / 1.15+7, 50 / (1.15)^2 + 220 (1.15)^2$$

= Rs. 178

$P_o = (D)\ (ADF_{i,n}) + (P_n)\ (Df_{i,n})$

### 4.8.4 n-Period Valuation Model

Similarly, if the investor plans to hold the share for n years and then sell, the value of the share
Would be:

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

$$P_0 = \sum_{t=1}^{n} D_t/(1+K_e)^t+P_n/(1+K_e)^n$$

If the expected dividend in different periods is (D) constant, we can calculate the value of the share by using annuity discount factor tables, as given below

**Illustration12**

An investor expects a dividend of Rs.5 per share for each of 10 years and a Selling price of Rs. 80 at the end of 10 years. Calculate the present value of share if his required rate is 12 %.

**Solution**

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

= Rs. 5 (ADF12, 10) + 80 (DF12, 10)
= Rs. 5(5.650) + 80 (.322)
= Rs. 28.250+25.760
= Rs. 54.01

## Activity C :

An investor holds a debenture of Rs. 1,000 carrying a coupon rate of10%p.a.The interest is payable semi-annually. The maturity period of the debenture is 7 years and it is to be redeemed at a premium of 10%.The investor's required rate of return is 12%p.a Calculate the value of the debenture.

**[Ans.Rs.950.95]**

## 4.9 Dividend Valuation Model

Dividend valuation model is the generalized from of common stock valuation. The concept of this model is that many investors do not contemplate selling their share in the near future. They want to hold the share for a very long period, say infinity. In case, the share is the capitalized value of an infinity stream of future dividends.

$$P0=\sum_{t=1}^{\infty} D_t/(1+K_e)^t$$

## 4.10 Some Variations in the Dividend Valuation Model

### 4.10.1 No Growth Case

If a firm has future dividend pattern with on growth or where the dividend remain constant over time, the value of the share shall be the capitalization of perpetual stream of constant dividends:

$$P_0 = D / K_e$$

**Illustration 13**

A company is presently paying a dividend of Rs.6 per share and is expected not to deviate from this in future. Calculate the value of the share if the required rate of return is 15%.

$P_0 = D/K_e$

$= 6/.15$

$=$ Rs.40

### 4.10.2 Constant Growth Case

It the dividends of a firm are expected to grow at a constant rate forever, the value of the share can be calculated as:

$$P_0 = D_1/K_{e-g} = D_0(1+g)/K_{e-g}$$

Where,

$D_0$ = Current dividend
$D_1$ = Expected dividend in year 1
$K_e$ = required rate of return on equity
G = Expected percent growth in dividend.

**Illustration 14**

A company is expected to pay a dividend of Rs.6 per share next year. The dividends are expected to grow perpetually at a rate of 9 percent. What is the value of its share if the required rate of return is 15%?

**Solution**

$P_0 = D_1/K_{e-g}$
$= 6/0.15-.09$
$= 6/.06$
$=$ Rs.100

**Illustration15**

The current price of a company's share is Rs.75 and dividend per share isRs.5. Calculate the dividend growth rate, if its capitalization rate is 12%.

**Solution**

$P_0 = D_1/K_{e-g} = D0\ (1+g)/K_{e-g}$
$75 = 5(1+g)/0.12-g$
$9.0-75\ g = 5+5g$
Or, $-80g = -4$
Or, $g = -4/-80$
$= 0.05$ or 5%

**Illustration16**

The current price of a company's share is Rs.200.The Company is expected to pay a dividend of Rs.5 per share next year with an annual growth rate of 10 percent. If an investor's required rate of return is 12%, should he buy the share?

**Solution**

$P_0 = D_1/K_{e-g}$
$= 5/0.12-0.10$
$= 5/0.02$
$=$ Rs. 250

As the value of the share (Rs.250) is more than its current price of Rs.200, the investor should buy the share

**Illustration 17**

The book value per share of a company is Rs.145.50 and its rate of return on equity is 10%. The company follows a dividend policy of 60% pay out. What is the price of its share if the capitalization rate is 12%.

**Solution**

Earnings per share (EPS) = 145.50*10/100=Rs.14.55

Dividend per share ($D_1$) = 14.55*60/100=Rs.8.73

Growth in share (g) = 0.10*40/100 = Rs.0.04

Price of the share, $P_0 = D_1/K_{e-g}$

= 8.73/0.12-0.04

= 8.73/0.08

= Rs.109.13

### 4.10.3 Supernormal Growth

If dividends of a firm are expected to grow at a supernormal growth rate during the periods when it is experiencing very high demand for its products and then, the dividend, grow at a normal rate whet he demand reaches the normal level, the constant growth equation [$P_0=D_0(1+g) / K_{e-g}$] has to be suitably modified to find out the present value of a share. In case the dividends of a firm are expected to grow at a supernormal growth rate, $g_s$, for n years and then grow at a normal growth rate $g_s$, till in finite; the present value of the share can be calculated as:

$$P_0 = \sum_{t=1}^{n} \frac{D_0(1+g_s)^t}{(1+ke)^t} + \sum_{t=n+1}^{\alpha} \frac{Dn\,(1+gn)^{t-n}}{(1+ke)^t}$$

The following steps are involved in solving the above equation:

**(1)** Calculate the present value of expected value of expected dividends during supernormal Growth period.

**(2)** Calculate the present value of the share at the end of the supernormal growth period.

$$P_n = D_n + 1/K_e - g_n$$

**(3)** Discount $P_n$ back to $P_0$ to find out its present value at t=0.

$$P_0 = P_n (1/1+K_e)^n$$

(4) Add the present value of expected dividend as calculated in step 1 with the present value $P_0$ as calculated in step3.

**Illustration 18**

A company is currently paying a dividend of Rs.4.24 per share. The dividend is expected to grow at a 18 percent annual rate for five years and then at 12 percent for ever. What is the present value of the share, if the capitalization rate is 14 percent?

**(1) Calculation of Present Value of Expected Dividends During supernormal Growth Period**:

**Table 4.4**

| Year | Expected Dividend(Rs) | P.V. Factor at14% | P.V. of Dividend(Rs) |
|---|---|---|---|
| 1 | (4.24)(1.18)1=5.00 | 0.877 | 4.39 |
| 2 | 4.24(1.18)2 =5.90 | 0.769 | 4.54 |
| 3 | 4.24(1.18)3 =6.96 | 0.675 | 4.70 |
| 4 | 4.24(1.18)4=8.21 | 0.592 | 4.86 |
| 5 | 4.24(1.18)5=9.69 | 0.519 | 5.03 |
| | | | 23.52 |

(**2) Calculation of P.V.at the end of year 5**:

$$P_n = D_{n+1}/K_e - g_n = D_5 (1+g_n)/k_e - g_n$$
$$= 9.69(1.12)/0.14-0.12$$
$$= 10.85/0.02$$
$$= \text{Rs.}542.50$$

**(3) Calculation of Present Value ($P_0$) today at 14% discount rate**:

$$P_0 = P_n(1/1+k_e)$$
$$= P_5(1/(1.14)^5)$$
$$= 542.50/(1.14)^5$$
$$= 542.50(0.519)$$
$$= \text{Rs.}281.56$$

**(4) Present value of share today**

$$= \text{Rs. } 23.52+281.56 = \text{Rs.}305.08$$

## 4.11 Earnings Capitalisation Model

When the earnings of the firm are stable or when there is an expansion situation, the value of an equity share can be determined by capitalization of earnings. The earnings of the firm will best able if it neither retains any earnings nor employs any external financing. In such a situation, the retention rate, b is zero and the growth rate, be would also be zero because g = br. Further as there is no retention, determined as:

$$\mathbf{P_o = \frac{E_0(1-b)}{K_e - br}}$$

$$\text{Or,} \quad P_0 = \frac{E_0}{K_e} \text{ (as b=0)}$$

$$\text{Or,} \quad P_0 = \frac{D_0}{Ke} \text{ as } (E_0 = D_0)$$

The expansion situation in a firm is when it has investment opportunities which will generate internal rate of return, r equal to the equity capitalization rate, $k_e(r=k_e)$;in such situation also:

$$P_0 = \frac{E_{0\ as}}{K_e} \text{ proved below:}$$

$$P_0 = \frac{E_0(1-b)}{k_e - br}$$

$$\text{Or,} \quad P_0 = \frac{E_0(1-b)}{(k_e - bk_e)}$$

$$\text{Or,} \quad P_0 = \frac{E_0(1-b)}{K_e(1-b)}$$

$$\text{Or,} \quad P_0 = E_o / k_e$$

**Illustration 19**

Calculate the price of an equity share from the following data:]

| | |
|---|---|
| Earnings per share (ESP) | Rs.20 |
| Internal Rate of Return (r) | 20% |
| Equity Capitalization Rate ($k_e$) | |

**Solution**

$$P_0 = \frac{E_0}{K_e}$$

$$= 20/.20$$

$$= \text{Rs.}100$$

**Illustration 20**

A Company decides that it will not pay any dividends for 20 years. After that time it is expected that the company could pay dividend of Rs.15 per share indefinitely. However, the company at present could pay Rs.3 per share. The required rate of this company's shareholder is 10 percent. What is the loss to each shareholder as a result of the policy of the company? Calculate the value of the equity share

**Solution**

The value of the share at the end of 20 years shall be:

$$P_{20} = 15/.10$$
$$= Rs.150.$$

The current value of the share is.

$$P_0 = 150/ (1.1)20$$
$$= Rs.22.29$$

The value of the share if the company at present could pay dividend of Rs.3 per share forever:

$$P_0 = 3/.10$$
$$= Rs.30$$

Thus, the loss per share to each shareholder is:

Rs. 30- 22.29 = Rs.7.71

## 4.12 Rate of Return on Equity Share

The value of an equity share is a function of cash inflows expected by the investors and the risk associated with the cash inflows. It is calculated by discounting the future stream of dividends at the required rate of return, called the capitalization rate. The required rate of return depends upon the element of risk associated with investment in shares. It will be equal to the risk-free rate of interest plus the premium for risk. Thus, the required rate of return, $K_e$, for a share is,

$$K_e = \text{risk-free rate of interest} + \text{premium for risk}$$

Further, if the dividends of a firm are expected to grow at a constant rate forever and the market is in equilibrium, there should be no difference between the present value and the market price of the share. In such a situation, the required rate of return can be calculated with the following
Equation:

$$P_0 = \frac{D_1}{K_e - g}$$

$$\text{Or,} \quad Ke = \frac{D_1}{P_0} + g$$

Where,

$P_0$ = Current price of the share
$K_e$ = required rate of return
$D_1$= Expected dividend in year 1
g = Rate of growth

Sometimes, we may be required to calculate the rate of return which investor can expect if he purchases an equity share at the current market price (P0) hold it for one year and then sell the same at the market price prevailing at the end of one year (P1). The expected rate return, re, can be calculated with the following formula

$$P_0 = \frac{D_1 + P_1}{(1+r_e)}$$

$$\text{Or, } r_e = \frac{D_1}{P_0} + \frac{P_1 - P_0}{P_0}$$

In case, the investor wants to hold the share for a very long period, say infinity and the dividend
Are expected to grow at a compound annual rate, the expected rate of return re, can be calculated as:

$$r_e = \frac{D_1}{P_0} + g$$

**Illustration 21**

The equity share of a company is currently selling at Rs. 80. It is expected that the company will Pay a dividend of Rs. 4 at the end of one year and the share can be sold at a price of Rs. 88. Calculate the return on share. Should an investor buy his capitalization rate is 12 %

**Solution**

$$r_e = \frac{D_1}{P_0} + \frac{P_1 - P_0}{P_0}$$

$$= 4/80 + 88–80/80$$
$$= 0.05 + 0.10$$
$$= 0.15 \text{ or } 15\%$$

The investor should buy the share as expected return on share (15%) is higher than the capitalization rate of 10%.

**Illustration 22**

The current price of a company's share is Rs. 60.The Company is expected to pay a dividend of Rs.4.80 per share at the end of one year. The dividends are expected to grow perpetually at a rate of 6 percent. If an investor's required rate of return is 15 percent, should he buy the share?

**Solution**

$$r_e = \frac{D_1}{P_0} + g$$

$$= 4.80/60+0.06$$

$$= 0.08+0.06$$

$$= 0.14 \text{ or } 14\%$$

As the expected rate of return, 14% is less than the 15% required rate of return, they should not be bought.

## 4.13 Dividend Capitalisation

Sometimes, the firms do not declare dividends so as to finance their future programs. In such case, the dividends are non-existent, but the market prices may be high. In these cases, it is seen that the investors use earnings as a proxy for dividends in the above models. The dividend capitalization model and earning capitalization model yield the same result only when all the earning are paid out as dividends. Then there is no growth $P=E_1/i$ where the earning ($E_1$)(or dividends) grow at a constant rate, **then the formula is $P=E_1/i-g$**

When a portion of the earning is retained, the dividend capitalization model is to be used. When growth in the expected future dividend is taken as a function of retained that are reinvested in profitable projects, it is double counting to include both the earning and the future growth rate of dividend in the same model as the latter depend upon the former also, in part .

## 4.14 Earning Capitalisation

It is to be noted that higher future dividend are an alternative to present dividend and are not an addition to the present dividend stream. If E =D, the firm cannot grow. Thus the investors who use the price-earnings ratio tend to overstate the market price due to the double counting problem. In reality, the earning do not grow at a constant rate nor the dividend. For theoretical nicety, these assumptions are made. But as limitations, it should be noted that the desired rate of return and the actual rate may not coincide and there is a element of subjectivity in the desired rate of return. Besides, the use of price-earnings ratio following the dividend capitalization model, suffers from the fact that

earning data are historical but price is the present price, which already takes into account the past dividends, and the future dividend flow may not depend on the past earning, and price is paid for the future returns.

**Use of P/E Ratio**

Many practicing analysts use the simple multiplier technique of P/E ratio, but not the present value models referred to adobe.

**The ratio P/E = Current market Price/Earnings per share.**

By a analysis of the company's performance, the analyst computes the P/E multiplier (the times P is higher than the earning per share). In this case, he forecasts the future earnings per share for the next six months or one year and uses this historical multiplier of the same company or of the industry average multiplier to arrive at the market price. The resulting market price is company whit the actual market price to find out whether it is overpriced or underpriced. If it is overpriced, it is to be sold as per the principles of trading operations based on fundamental analysis.

The valuation technique based on discounting is cumbersome and serious forecasting problems in the process. The discount rate to be subjective factor and a number of assumptions are required to be made regarding the dividend flows in the present value models. Therefore, analysts and investors use only the P/E ratio for security valuation in practice. To sum up, the models more commonly used for security pricing are the dividend discounting method / earnings discounting method and the P/E ratio model. These models are dealt with in detail below.

## 4.15 Summary

In India, the valuation of securities used to be done by the CCI for the purpose of fixing up the premium on new issue of existing companies. These guidelines used by CCI were applicable up to May 1992, when the CCI was abolished. Although the present market price will be taken into account a more rational price used to be worked out by the CCI on certain criteria. Thus, the CCI used the concept of Net Asset Value (NAV) and Profit-Earning Capacity Value (PECV)as the basis for fixing up the premium on share. Thanet worth includes equity capital plus free reserves and surplus less contingent liabilities. The PECV is estimated by multiplying the earnings per share by a capitalization rate of 15% for manufacturing companies, 20% for trading companies and 17.5% In the case of intermediate companies. Earnings per share (EPS) are calculated by dividing the three-year average post-tax profits by the total number of equity shares. Thus, if EPS is Rs.5 and if the price earnings multiplier is 15, the price of share, which is reflected by the PECV, should be Rs.5*15=75(if it is a manufacturing company). To be more specific, the Net Asset Value of a company (NAV) is equal to total assets less liabilities, borrowings, debts, preference capital and contingent liabilities which is to be divided by the number of shares.

The (PECV) is obtained by capitalizing the average profits after tax (over the past three years) by a rate varying from 15% to 20% depending on the nature of the activity of the company as already noted. The fair value of the share in the average of the NAV and PECV. This fair value (FV)is taken into account for comparison with the average market price over the preceding 3 years and the average market price should be less than the fair value by at least 20%.If the average market price in 20%to 50% of the FV, the capitalization rate to be used is 12%. If it is 50% to 75%of the FV the capitalization rate is 10% and if it is more than 75% of FV, the capitalization rate is 8%.

## 4.16 Self Assessment Questions

1. Explain the various concepts of valuation. Which this is the most appropriate concept for making financial decisions.
2. Explain in detail the method of valuation of any equity share.
3. How will you determine the value of a bond with a maturity period?
4. What do you understand by bonds in perpetuity? How are they valued? Explain
5. Is the valuation of preference share different from the valuation of bonds? Illustrate.
6. What is a Warrant? How is it valued?
7. Face value of a 15% debenture is Rs.1; 000.The maturity period of the debenture is 5 years. What is the value of the debenture if the required rate of return is; (a) 15% and (b) 12%? [Ans. (a) Rs. 1,000, (b) Rs.1108]
8. Mr. X has a perpetual bond of the face value of Rs.1000.He receives an interest ofRs.80 annually. Its current value is Rs.1200.What is the yield to maturity? **[Ans.Rs.6.667%]**

## 4.17 Reference Books


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# Unit-5 Stock Exchange: An Introduction

**Structure of Unit**



## 5.0 Objectives

After completing this unit, you would be able to:

- Understand the Indian securities market;
- Classify the primary and secondary market
- Know about the functioning stock exchanges
- Learn the history of Indian Stock Exchange
- Know about the functions of Stock Exchange
- Classify the business environment as internal and external;
- Know about various Stock Exchanges of India.

## 5.1 Introduction

The securities markets in India have witnessed several policy initiatives, which has developed the market micro-structure, modernized operations and broadened investment choices for the investors. The irregularities in the securities transactions in the last quarter of 2000-01, hastened the introduction and implementation of several reforms and hence enhance the investor protection, and effectiveness of SEBI as the capital market regulator.

Securities market predominantly deal in equity shares however, it also trade bonds and debentures. Well regulated and active securities market promotes capital formation in economy. Growth of primary market depends upon secondary market. The health of an economy is reflected by the growth of the stock market.

## 5.2 What is Securities Market?

Securities Market or Capital Market is a market where the trading of company stock, both listed securities and unlisted takes place. It is different from stock exchange because it includes all the national stock exchanges of the country. In other words, it is a place where buyers and sellers of securities can enter into transactions to purchase and sell shares, bonds, debentures etc.

Further, it performs an important role of enabling corporates, entrepreneurs to raise resources for their companies and business ventures through public issues. Transfer of resources from those having idle resources (investors) to others who have a need for them (corporates) is most efficiently achieved through the securities market. Stated formally, securities markets provide channels for reallocation of savings to investments and entrepreneurship. Savings are linked to investments by a variety of intermediaries, through a range of financial products, called 'Securities'.

## 5.3 Types of Securities Market

The securities market has two mutually dependent and indivisible segments, the new issues (primary market) and the stock (secondary) market.

**a) Primary Market**

The primary market provides the channel for sale of new securities. It is that part of the capital markets that deals with the issuance of new securities. Primary market provides opportunity to issuers of securities; government as well as corporates, to raise funds to meet their requirements. They may issue the securities at face value, or at a discount/premium and these securities may take a variety of forms such as equity, debt

etc. They may issue the securities in domestic market and/or international market. The primary market issuance is done either through public issues or private placement. There are two major types of issuers who issue securities. The corporate entities issue mainly debt and equity instruments (shares, debentures, etc.), while the governments (central and state governments) issue debt securities (dated securities, treasury bills). Primary markets create long term instruments through which corporate entities borrow from capital market.

**Features of primary markets are:**

- 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.
- The company receives the money and issues new security certificates to the investors.
- Primary issues are used by companies for the purpose of setting 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.
- The financial assets sold can only be redeemed by the original holder.

**b) Secondary Market**

Secondary market refers to a market where securities are traded after being primarily offered to the public in the primary market and/or listed on the Stock Exchange. Majority of the trading is done in the secondary market. Secondary market comprises of equity markets and the debt markets.

The secondary market enables participants who hold securities to adjust their holdings in response to changes in their assessment of risk and return. They are also easy sold for cash to meet the liquidity needs of investors. The secondary market has further two components, namely the over-the-counter (OTC) market and the exchange-traded market/ an exchange.

The secondary market is used for variety of assets which vary from loans to stocks, from fragmented to centralized, and from illiquid to very liquid. The major stock exchanges are the most visible example of liquid secondary markets - in this case, for stocks of publicly traded companies.

**Features of secondary market are:**

- The most important feature of the secondary market is to create liquidity in securities. Liquidity means immediate conversion of securities into cash.
- **Secondary market comes after** primary market, i.e. any new security cannot be sold for the first time in the secondary market. New securities are first sold in the primary market and thereafter comes the turn of the secondary market.
- The secondary market has a particular place which is called Stock Exchange. However, it is not essential that all the buying and selling of securities will be done only through stock exchange. Two individuals can buy or sell them mutually. This will also be called a transaction of the secondary market. Generally, most of the transactions are made through the medium of stock exchange.
- The rates of shares and other securities often fluctuate in the share market. Many new investors enter this market to exploit this situation. This leads to an increase in investment in the industrial sector of the country and hence increases new investment.

## 5.4 Difference between Primary and Secondary Market

**a) Function:** While the main function of primary market is to raise long-term funds through fresh issue of securities, the main function of secondary market is to provide continuous and ready market for the existing long-term securities.

**b) Participants**: While the major players in the primary market are financial institutions, mutual funds, underwriters and individual investors, the major players in secondary market are all of these and the stockbrokers who are members of the stock exchange.

**c) Listing Requirement**: While only those securities can be dealt with in the secondary market, which have been approved for the purpose (listed), there is no such requirement in case of primary market.

**d) Determination of prices**: In case of primary market, the prices are determined by the management with due compliance with SEBI requirement for new issue of securities. But in case of secondary market, the price of the securities is determined by forces of demand and supply of the market and keeps on fluctuating.

## 5.5 What is Stock Exchange?

Stock Exchange is also known as *Stock Market* or *Share Market*. The Indian Securities Contracts (Regulation) Act of 1956, defines Stock Exchange as, "An association, organization or body of individuals, whether incorporated or not, established for the

purpose of assisting, regulating and controlling business in buying, selling and dealing in securities." It is one of the important constituent of securities market. It is the center of a network of transactions where securities buyers meet sellers at a certain price. Thus it is an organized and regulated financial market for the purchase and sale of industrial and financial securities at prices governed by the forces of demand and supply. It is a convenient place where trading in securities is conducted in systematic manner i.e. as per certain rules and regulations. It is a form of exchange which provides services for stock brokers and traders to trade stocks, bonds, and other securities. A stock exchange is not necessary a physical facility and with the advancement of information technology are increasingly rare those traders that exchange their stocks in the floor of a major stock exchange. Stock exchanges also provide facilities for issue and redemption of securities and other financial instruments, and capital events including the payment of income and dividends.

Stock exchanges basically serve as (1) *primary markets* where corporates, governments, and other incorporated bodies can raise capital by channeling savings of the investors into productive projects; and (2) *secondary markets* where investors can sell their securities to other investors for cash, thus reducing the risk of investment and maintaining liquidity in the system. Stock exchanges impose stringent rules, listing requirements, and statutory requirements that are binding on all listed and trading parties. It performs various functions and offers useful services to investors and borrowing companies. It is an investment intermediary and facilitates economic and industrial development of a country. Therefore, it is indispensable for the smooth and orderly functioning of corporate sector in a free market economy. The main stock market in the United States is New York Stock Exchange (NYSE). In Europe, examples of stock exchanges include the London Stock Exchange, the Paris Bourse, and the Deutsche Bourse. In Asia, the main stock exchanges include the Tokyo Stock Exchange, the Hong Kong Stock Exchange, and the Bombay Stock Exchange. In Latin America, there are such exchanges as the BOVESPA in Brazil and the MERVAL in Argentina. London stock exchange (**LSE**) is the oldest stock exchange in the world. While Bombay stock exchange (**BSE**) is the oldest in India.

## 5.6 History of Stock Exchange

Indian stock market marks to be one of the oldest stock market in Asia. It dates back to the close of 18th century when the East India Company used to transact loan securities. In the 1830s, trading on corporate stocks and shares in Bank and Cotton presses took place in Bombay. Though the trading was broad but the brokers were hardly half dozen during 1840 and 1850. An informal group of 22 stockbrokers began trading under a banyan tree opposite the Town Hall of Bombay from the mid-1850s, each investing a

(then) princely amount of Rupee 1. This banyan tree still stands in the Horniman Circle Park, Mumbai. In 1860, the exchange flourished with 60 brokers. In fact the 'Share Mania' in India began with the American Civil War broke and the cotton supply from the US to Europe stopped. Further the brokers increased to 250. The informal group of stockbrokers organized themselves as the 'The Native Share and Stockbrokers Association' which, in 1875, was formally organized as the Bombay Stock Exchange (BSE).

BSE was shifted to an old building near the Town Hall. In 1928, the plot of land on which the BSE building now stands (at the intersection of Dalal Street, Bombay Samachar Marg and Hammam Street in downtown Mumbai) was acquired, and a building was constructed and occupied in 1930. Premchand Roychand was a leading stockbroker of that time, and he assisted in setting out traditions, conventions, and procedures for the trading of stocks at Bombay Stock Exchange and they are still being followed. Several stock broking firms in Mumbai were family run enterprises, and were named after the heads of the family.

In 1956, the Government of India recognized the Bombay Stock Exchange as the first stock exchange in the country under the Securities Contracts (Regulation) Act. The most decisive period in the history of the BSE took place after 1992. In the aftermath of a major scandal with market manipulation involving a BSE member named Harshad Mehta, BSE responded to calls for reform with intransigence. The foot-dragging by the BSE helped radicalise the position of the government, which encouraged the creation of the National Stock Exchange (NSE), which created an electronic marketplace.

NSE started trading on 4 November 1994. Within less than a year, NSE turnover exceeded the BSE. BSE rapidly automated, but it never caught up with NSE spot market turnover. The second strategic failure at BSE came in the following two years. NSE embarked on the launch of equity derivatives trading. BSE responded by political effort, with a friendly SEBI chairman (D. R. Mehta) aimed at blocking equity derivatives trading. The BSE and D. R. Mehta succeeded in delaying the onset of equity derivatives trading by roughly five years. But this trading, and the accompanying shift of the spot market to rolling settlement, did come along in 2000 and 2001 - helped by another major scandal at BSE involving the then President Mr. Anand Rathi. NSE scored nearly 100% market share in the runaway success of equity derivatives trading, thus consigning BSE into clearly second place. Today, NSE has roughly 66% of equity spot turnover and roughly 100% of equity derivatives turnover.

## 5.7 Features of Stock Exchange

Characteristics or features of stock exchange are:-

a) **Association of persons**: A stock exchange is an association of persons or body of individuals which may be registered or unregistered.

b) **Recognition from Central Government**: Stock exchange is an organized market. It requires recognition from the Central Government.

c) **Working as per rules**: Buying and selling transactions in securities at the stock exchange are governed by the rules and regulations of stock exchange as well as SEBI Guidelines. No divergence from the rules and guidelines is allowed in any case.

d) **Market for securities**: Stock exchange is a market, where securities of corporate bodies, government and other incorporated bodies are bought and sold.

e) **Deals in second-hand securities**: It deals with shares, debentures, bonds and such securities already issued by the companies. In short it deals with existing or second hand securities and hence it is called secondary market.

f) **Regulates trade in securities**: Stock exchange does not buy or sell any securities on its own account. It merely provides the necessary infrastructure and facilities for trade in securities to its members and brokers who trade in securities. It regulates the trade activities so as to ensure free and fair trade.

g) **Allows dealings only in listed securities**: Stock exchanges maintain an official list of securities that could be purchased and sold on its floor. Securities which do not appear in the official list of stock exchange are called unlisted securities. Such unlisted securities cannot be traded in the stock exchange.

h) **Transactions produced only through members**: All the transactions in securities at the stock exchange are produced only through its authorized brokers and members. Outsiders or direct investors are not allowed to enter in the trading circles of the stock exchange. Investors have to buy or sell the securities at the stock exchange through the authorized brokers only.

i) **Specific location**: Stock exchange is a particular market place where authorized brokers come together on working days on the floor of market called trading circles and conduct trading activities. The prices of different securities traded are shown on screens. After the working hours market is closed. All the working of stock exchanges is conducted and controlled through computers and electronic system.

j) **Financial Barometers**: Stock exchanges are the financial barometers and development indicators of economy of the country. Industrial growth and stability is reflected in the index of stock exchange.

## 5.8 Functions of Stock Exchange

a) **Continuous and ready market for securities:** Stock exchange provides a ready and continuous market for purchase and sale of securities. It provides ready market for buying and selling of securities.

b) **Facilitates evaluation of securities:** Stock exchange is useful for the evaluation of industrial securities. This enables investors to know the true worth of their holdings at any time. Comparison of companies in the same industry is possible through market prices.

c) **Encourages capital formation:** Stock exchange hastens the process of capital formation. It creates the habit of saving, investing and risk taking among the investing class and converts their savings into profitable investment. It acts as an instrument of capital formation. In addition, it also acts as a channel for safe and profitable investment.

d) **Provides safety and security in dealings:** Stock exchange provides safety, security and equity in dealings as transactions are conducted as per well defined rules and regulations. The managing body of the exchange keeps control on the members. Fraudulent practices are also checked effectively. Due to various rules and regulations, stock exchange functions as the custodian of funds of genuine investors.

e) **Regulates company management:** Listed companies have to comply with rules and regulations of concerned stock exchange and work under the vigilance (i.e supervision) of stock exchange authorities.

f) **Facilitates public borrowing:** Stock exchange serves as a platform for marketing Government securities also. It enables government to raise public debt easily and quickly.

g) **Provides clearing house facility:** Stock exchange provides a clearing house facility to members. It settles the transactions among the members quickly and with ease. The members have to pay or receive only the net dues (balance amounts) because of the clearing house facility.

h) **Facilitates healthy speculation:** Healthy speculation, keeps the exchange active. Normal speculation is not dangerous but provides more business to the exchange. However, excessive speculation is undesirable as it is dangerous to investors & the growth of corporate sector.

i) **Serves as Economic Barometer:** Stock exchange indicates the state of health of companies and the national economy. It acts as a barometer of the economic situation / conditions.

## 5.9 The Stock Exchanges of India

### Bombay Stock Exchange (BSE)

Established in 1875, BSE Ltd. (formerly known as Bombay Stock Exchange Ltd.), is Asia's first Stock Exchange and one of India's leading exchange groups. Over the past 137 years, BSE has facilitated the growth of the Indian corporate sector by providing it an efficient capital-raising platform. Popularly known as BSE, the bourse was established as "The Native Share & Stock Brokers' Association" in 1875. BSE is a corporatized and demutualised entity, with a broad shareholder-base which includes two leading global exchanges, Deutsche Bourse and Singapore Exchange as strategic partners. BSE provides an efficient and transparent market for trading in equity, debt instruments, derivatives, mutual funds. It also has a platform for trading in equities of small-and-medium enterprises (SME). In 2005, BSE was given the status of a full-fledged public limited company along with a new name as "Bombay Stock Exchange Limited". The BSE has computerized its trading system by introducing BOLT (Bombay on Line Trading) since March 1995.

More than 5000 companies are listed on BSE making it world's No. 1 exchange in terms of listed members. The companies listed on BSE Ltd command a total market capitalization of USD 1.32 Trillion as of January 2013. It is also one of the world's leading exchanges (3rd largest in December 2012) for Index options trading (Source: World Federation of Exchanges).

BSE also provides a host of other services to capital market participants including risk management, clearing, settlement, market data services and education. It has a global reach with customers around the world and a nation-wide presence. BSE systems and processes are designed to safeguard market integrity, drive the growth of the Indian capital market and stimulate innovation and competition across all market segments. BSE is the first exchange in India and second in the world to obtain an ISO 9001:2000 certification. It is also the first Exchange in the country and second in the world to receive Information Security Management System Standard BS 7799-2-2002 certification for its On-Line trading System (BOLT). It operates one of the most respected capital market educational institutes in the country (the BSE Institute Ltd.). BSE also provides depository services through its Central Depository Services Ltd. (CDSL) arm.

BSE's popular equity index - the S&P BSE SENSEX - is India's most widely tracked stock market benchmark index. It is traded internationally on the EUREX as well as leading exchanges of the BRCS nations (Brazil, Russia, China and South Africa).

BSE has won several awards and recognitions that acknowledge the work done and progress made like The Golden Peacock Global CSR Award for its initiatives in Corporate Social Responsibility, NASSCOM - CNBC-TV18's IT User Awards, 2010 in Financial Services category, Skoch Virtual Corporation 2010 Award in the BSE STAR MF category and Responsibility Award (CSR) by the World Council of Corporate Governance. Its recent milestones include the launching of BRICSMART indices derivatives, BSE-SME Exchange platform, S&P BSE GREENEX to promote investments in Green India.

## National Stock Exchange (NSE)

National Stock Exchange of India Limited (NSE) formed in 1992 is one important development in the Indian capital market. The need was felt by the industry and investing community since 1991. The NSE is slowly becoming the leading stock exchange in terms of technology, systems and practices in due course of time. NSE is the largest and most modern stock exchange in India. In addition, it is the third largest exchange in the world next to two exchanges operating in the USA

The NSE boasts of screen based trading system. In the NSE, the available system provides complete market transparency of trading operations to both trading members and the participants and finds a suitable match. The NSE does not have trading floors as in conventional stock exchanges. The trading is entirely screen based with automated order machine. The screen provides entire market information at the press of a button. At the same time, the system provides for concealment of the identity of market operations. The screen gives all information which is dynamically updated. As the market participants sit in their own offices, they have all the advantages of back office support, and facility to get in touch with their constituents.

a) Wholesale debt market segment;

b) Capital market segment; and

c) Futures & options trading.

## Over the Counter Exchange of India (OTCEI)

The OTCEI was incorporated in October, 1990 as a Company under the Companies Act 1956. It became fully operational in 1992 with opening of a counter at Mumbai. It is recognized by the Government of India as a recognized stock exchange under the Securities Control and Regulation Act 1956. It was promoted jointly by the financial institutions like UTI, ICICI, IDBI, LIC, GIC, SBI, IFCI, etc. It is the first exchange for small companies. It is the first screen based nationwide stock exchange in India. It assists in efficient capital formation, market making and helps start-ups and young

entrepreneurs in getting the required capital. The Exchange was set up to aid enterprising promoters in raising finance for new projects in a cost effective manner and to provide investors with a transparent and efficient mode of trading.

Modelled along the lines of the NASDAQ market of USA, OTCEI introduced many novel concepts to the Indian capital markets such as screen-based nationwide trading, sponsorship of companies, market making and scripless trading. As a measure of success of these efforts, the Exchange today has 115 listings and has assisted in providing capital for enterprises that have gone on to build successful brands for themselves like VIP Advanta, Sonora Tiles & Brilliant mineral water, etc.

Securities are traded on OTCEI through the 'OTCEI Automated Securities Integrated System' (OASIS); a state-of-art screen based trading system. OASIS combines the principles of order driven and quotes driven markets and enables trading members to access a transparent and efficient market directly through a nationwide telecommunication network.

## Inter-connected Stock Exchange of India Limited (ISE)

It is a national-level stock exchange, providing trading, clearing, settlement, risk management and surveillance support to its Trading Members. ISE incorporated as a company limited by guarantee in January, 1998. It has 791 Trading Members, who are located in 84 cities spread across 18 states. These intermediaries are administratively supported through the regional offices at Delhi, Kolkata, Patna, Ahmedabad, Coimbatore and Nagpur, besides Mumbai.

ISE aims to address the needs of small companies and retail investors by harnessing the potential of regional markets, so as to transform them into a liquid and vibrant market using state-of-the art technology and networking.

ISE has floated ISE Securities & Services Limited (ISS) as a wholly-owned subsidiary under the policy formulated by the Securities and Exchange Board of India (SEBI) for “Revival of Small Stock Exchanges”. The policy enunciated by SEBI permits a stock exchange to float a subsidiary, which can take up membership of larger stock exchanges, such as the National Stock Exchange of India Limited (NSE), and Bombay Stock Exchange Limited (BSE). ISS has been registered by SEBI as a Trading-cum-Clearing Member in the Capital Market segment and Futures & Options segment of NSE and Capital Market segment of BSE. Trading Members of ISE can access NSE and BSE by registering themselves as Sub-brokers of ISS. Thus, the trading intermediaries of ISS can access other markets in addition to the ISE market. ISS thus provides the investors in smaller cities, a one-stop solution for cost-effective and efficient trading and settlement services in securities.

Complementing the stock trading function, ISE's depository participant (DP) services reach out to intermediaries and investors at industry-leading prices. The Research Cell has been established with the objective of carrying out quality research on various facets of the Indian financial system in general and the capital market in particular.

### Objectives:

a) Create a single integrated national-level solution with access to multiple markets by providing high cost-effective service to investors across the country.
b) Create a liquid and vibrant national-level market for all listed companies in general and small capital companies in particular.
c) Optimally utilizing the existing infrastructure and other resources of Participating Stock Exchanges, which are under-utilized now.
d) Provide a level playing field to small Trading Members by offering opportunity to participate in a national market for investment-oriented business.
e) Provide clearing and settlement facilities to the Trading Members across the country at their doorstep in a decentralized mode.
f) Spread demat trading across the country.

## 5.10 Role of Stock Exchanges in Securities Market of India

a) **Effective mobilization of savings:** Stock exchanges provide organized market for individual as well as institutional investors. They regulate the trading transactions with proper rules and regulations in order to ensure investor's protection. This helps to consolidate the confidence of investors and small savers. Thus, stock exchanges attract small savings especially of large number of investors in the capital market.
b) **Promoting capital formation:** The funds mobilized through capital market are provided to the industries engaged in the production of various goods and services useful for the society. This leads to capital formation and development of national assets.
c) **Wider possibility of investment:** Stock exchanges provide a wider possibility for the investment to the people and organizations with investible surplus. Companies from diverse industries like Information Technology, Steel, Chemicals, Fuels and Petroleum, Cement, Fertilizers, etc. offer various kinds of equity and debt securities to the investors. Online trading facility has brought the stock exchange at the doorsteps of investors through computer network. Diverse type of securities is made available in the stock exchanges to suit the varying objectives and notions of different classes of investor. Necessary information from stock exchanges available from different sources guides the investors in the effective management of their investment portfolios.

d) **Liquidity of investment:** Stock exchanges provide liquidity of investment to the investors. Investors can sell out any of their investments in securities at any time during trading days and trading hours on stock exchanges. Thus, stock exchanges provide liquidity of investment. The on-line trading and online settlement of DEMAT securities facilitates the investors to sell out their investments and realize the proceeds within a day or two. Even investors can switch over their investment from one security to another according to the changing scenario of capital market.

e) **Investment priorities:** Stock exchanges facilitate the investors to decide his investment priorities by providing him the basket of different kinds of securities of different industries and companies. He can sell stock of one company and buy a stock of another company through stock exchange whenever he wants. He can manage his investment portfolio to maximize his wealth.

f) **Investment safety:** Stock exchanges through their by-laws, Securities and Exchange Board of India (SEBI) guidelines, transparent procedures try to provide safety to the investment in industrial securities. Government has established the National Stock Exchange (NSE) and Over the Counter Exchange of India (OTCEI) for investors' safety. Exchange authorities try to curb speculative practices and minimize the risk for common investor to preserve his confidence.

g) **Wide Marketability to Securities:** Online price quoting system and online buying and selling facility have changed the nature and working of stock exchanges. Formerly, the dealings on stock exchanges were restricted to its head quarters. The investors across the country were absolutely in dark about the price fluctuations on stock exchanges due to the lack of information. But today due to Internet, on line quoting facility is available at the computers of investors. As a result, they can keep track of price fluctuations taking place on stock exchange every second during the working hours. Certain T.V. Channels like CNBC are fully devoted to stock market information and corporate news. Even other channels display the on line quoting of stocks. Thus, modern stock exchanges backed up by internet and information technology provide wide marketability to securities of the industries. Demat facility has revolutionized the procedure of transfer of securities and facilitated marketing.

h) **Financial resources for public and private sectors:** Stock Exchanges make available the financial resources available to the industries in public and private sector through various kinds of securities. Due to the assurance of liquidity, marketing support, investment safety assured through stock exchanges, the public issues of securities by these industries receive strong public response (resulting in oversubscription of issue).

i) **Funds for Development Purpose:** Stock exchanges enable the government to mobilize the funds for public utilities and public undertakings which take up the developmental activities like power projects, shipping, railways, telecommunication,

dams & roads constructions, etc. Stock exchanges provide liquidity, marketability, price continuity and constant evaluation of government securities.

j) **Indicator of Industrial Development:** Stock exchanges are the symbolic indicators of industrial development of a nation. Productivity, efficiency, economic-status, prospects of each industry and every unit in an industry is reflected through the price fluctuation of industrial securities on stock exchanges. Stock exchange Sensex and price fluctuations of securities of various companies tell the entire story of changes in industrial sector.

k) **Barometer of National Economy:** Stock exchange is taken as a Barometer of the economy of a country. Each economy is economically symbolized (indicators) by its most significant stock exchange. New York Stock Exchange, London Stock Exchange, Tokyo Stock Exchange and Bombay Stock Exchange are considered as barometers of U.S.A, United Kingdom, Japan and India respectively. At both national and international level these stock exchanges represent the progress and conditions of their economies.

l) Thus, stock exchange serves the nation in several ways through its diversified economic services which include imparting liquidity to investments, providing marketability, enabling evaluation and ensuring price continuity of securities.

## 5.11 Benefits of Stock Exchanges

**For community:**

a) It assists the economic development by providing a body of interested investors.

b) It uploads the position of superior enterprises and assists them in raising further funds.

c) It encourages capital formation in the economy.

d) Government can undertake projects of national importance and social value raising funds through the sale of its securities on the stock exchange.

e) The stock exchanges help the central bank of the country to control credit by undertaking open market operations (purchase and sale of securities).

**For company:**

a) A company whose shares listed on stock exchange enjoys better reputation and credit.

b) The market for the shares of listed companies is naturally widened.

c) The market price of securities is likely to be higher in relation to its earnings, dividends and property values. This raises the bargaining power of the company in the event of a takeover, merger or amalgamation.

**For investors:**

a) Liquidity of the investment is increased.
b) The securities dealt on a stock exchange are good collateral security for loans.
c) The stock exchange safeguards interests of investors through strict enforcement of rules and regulations.
d) The present net worth of investments can be easily known by the daily quotations.

## 5.12 Listing of Securities

Listing means admission of securities to dealings on a recognized stock exchange. The securities may be of any public limited company, Central or State Government, quasi governmental and other financial institutions/corporations, municipalities, etc.

**The objectives of listing are:**

- To provide liquidity to securities;
- To mobilize savings for economic development;
- To protect interest of investors by ensuring full disclosures.

**Listing at BSE**

The BSE Limited has a dedicated Listing Department to grant approval for listing of securities of companies in accordance with the provisions of the Securities Contracts (Regulation) Act, 1956, Securities Contracts (Regulation) Rules, 1957, Companies Act, 1956, Guidelines issued by SEBI and Rules, Bye-laws and Regulations of BSE.

BSE has set various guidelines and forms that need to be adhered to and submitted by the companies. These guidelines will help companies to expedite the fulfillment of the various formalities and disclosure requirements that are required at various stages of:

**Public Issues**

- Initial Public Offering
- Further Public Offering
- Preferential Issues
- Indian Depository Receipts
- Amalgamation
- Qualified Institutions Placements

A company intending to have its securities listed on BSE has to comply with the listing requirements prescribed by it. Some of the requirements are as under:

## 1. Minimum Listing Requirements for New Companies

The following eligibility criteria have been prescribed for listing of companies on BSE, through Initial Public Offerings (IPOs) & Follow-on Public Offerings (FPOs):

- The minimum post-issue paid-up capital of the applicant company (hereinafter referred to as "the Company") shall be Rs. 10 crore for IPOs & Rs.3 crore for FPOs; and
- The minimum issue size shall be Rs. 10 crore; and
- The minimum market capitalization of the Company shall be Rs. 25 crore (market capitalization shall be calculated by multiplying the post-issue paid-up number of equity shares with the issue price).
- In respect of the requirement of paid-up capital and market capitalization, the issuers shall be required to include in the disclaimer clause forming a part of the offer document that in the event of the market capitalization (product of issue price and the post issue number of shares) requirement of BSE not being met, the securities of the issuer would not be listed on BSE.
- The applicant, promoters and/or group companies, shall not be in default in compliance of the listing agreement.
- The above eligibility criteria would be in addition to the conditions prescribed under SEBI (Issue of Capital & Disclosure Requirements) Regulations, 2009.
- The Issuer shall comply to the guidance/ regulations applicable to listing as bidding inter alia from
- Securities Contracts (Regulations) Act 1956
- Securities Contracts (Regulation) Rules 1957
- Securities and Exchange Board of India Act 1992
- And any other circular, clarifications, guidelines issued by the appropriate authority.
- Companies Act 1956

## 2. Minimum Requirements for Companies Delisted by BSE seeking Relisting on BSE

Companies delisted by BSE and seeking relisting at BSE are required to make a fresh public offer and comply with the existing guidelines of SEBI and BSE regarding initial public offerings.

### 3. Permission to Use the Name of BSE in an Issuer Company's Prospectus

Companies desiring to list their securities offered through a public issue are required to obtain prior permission of BSE to use the name of BSE in their prospectus or offer for sale documents before filing the same with the concerned office of the Registrar of Companies.

BSE has a Listing Committee, comprising of market experts, which decides upon the matter of granting permission to companies to use the name of BSE in their prospectus/offer documents. This Committee evaluates the promoters, company, project, financials, risk factors and several other aspects before taking a decision in this regard.

Decision with regard to some types/sizes of companies has been delegated to the Internal Committee of BSE.

### 4. Submission of Letter of Application

As per Section 73 of the Companies Act, 1956, a company seeking listing of its securities on BSE is required to submit a Letter of Application to all the stock exchanges where it proposes to have its securities listed before filing the prospectus with the Registrar of Companies.

### 5. Allotment of Securities

As per the Listing Agreement, a company is required to complete the allotment of securities offered to the public within 30 days of the date of closure of the subscription list and approach the Designated Stock Exchange for approval of the basis of allotment. In case of Book Building issues, allotment shall be made not later than 15 days from the closure of the issue, failing which interest at the rate of 15% shall be paid to the investors.

### 6. Trading Permission

As per SEBI Guidelines, an issuer company should complete the formalities for trading at all the stock exchanges where the securities are to be listed within 7 working days of finalization of the basis of allotment.

A company should scrupulously adhere to the time limit specified in SEBI (Disclosure and Investor Protection) Guidelines 2000 for allotment of all securities and dispatch of allotment letters/share certificates/credit in depository accounts and refund orders and for obtaining the listing permissions of all the exchanges whose names are stated in its prospectus or offer document. In the event of listing permission to a company being denied by any stock exchange where it had applied for listing of its securities, the company cannot proceed with the allotment of shares. However, the company may file an appeal before SEBI under Section 22 of the Securities Contracts (Regulation) Act, 1956.

### 7. Requirement of 1% Security

Companies making public/rights issues are required to deposit 1% of the issue amount with the Designated Stock Exchange before the issue opens. This amount is liable to be forfeited in the event of the company not resolving the complaints of investors regarding delay in sending refund orders/share certificates, non-payment of commission to underwriters, brokers, etc.

### 8. Payment of Listing Fees

All companies listed on BSE are required to pay to BSE the Annual Listing Fees by 30th April of every financial year as per the Schedule of Listing Fees prescribed from time to time.

The schedule of Listing Fees for the year 2011-12, is given here under:

## Table 5.1

**Securities *other than Privately Placed Debt Securities and Mutual Funds**

| Sr.No. | Particulars | Norms |
|---|---|---|
| 1 | Initial Listing Fees | Rs. 20,000/- |
| 2 | Annual Listing Fees: | |
| (i) | Upto Rs. 5 Crs. | Rs. 15,000/- |
| (ii) | Rs.5 Crs. To Rs.10 Crs. | Rs. 25,000/- |
| (iii) | Rs.10 Crs. To Rs.20 Crs. | Rs. 40,000/- |
| (iv) | Rs.20 Crs. To Rs.30 Crs. | Rs. 60,000/- |
| (v) | Rs.30 Crs. To Rs.100 Crs. | Rs. 70,000/- plus Rs. 2,500/- for every increase of Rs. 5 crs or part thereof above Rs. 30 crs. |
| (vi) | Rs.100 Crs. to Rs.500 Crs. | Rs. 125,000/- plus Rs. 2,500/- for every increase of Rs. 5 crs or part thereof above Rs. 100 crs. |
| (vii) | Rs.500 Crs. to Rs.1000 Crs. | Rs. 375,000/- plus Rs. 2,500/- for every increase of Rs. 5 crs or part thereof above Rs. 500 crs. |
| (vi) | Above Rs. 1000 Crs. | Rs. 625,000/- plus Rs. 2,750/- for every increase of Rs. 5 crs or part thereof above Rs. 1000 crs. |
| | **Note:** In case of debenture capital (not convertible into equity shares), the fees will be 75% of the above fees. | |
| * includes equity shares, preference shares, indian depository receipts, fully convertible debentures, partly convertible debentures and any other security convertible into equity shares. | | |

**Placed Debt Securities**

| Sr.No. | Particulars | Norms |
|---|---|---|
| 1 | Initial Listing Fees | NIL |
| 2 | Annual Listing Fees | |
| (i) | Issue size up to Rs.5 Crs. | Rs. 2,500/- |
| (ii) | Above Rs.5 Crs. and up to Rs.10 Crs. | Rs. 3,750/- |
| (iii) | Above Rs.10 Crs. and up to Rs.20 Crs. | Rs. 7,500/- |
| (iv) | Above Rs.20 Crs. | Rs. 7,500/- plus Rs. 200/- for every increase Rs.1 Cr. or part thereof above Rs.20 crs. Subject to a maximum of Rs.30,000/- per instrument. |
| **Note:** Cap on the annual listing fee of debt instruments per issuer is Rs.5,00,000/- per annum. | | |

**Mutual Funds**

| Sr.No. | Particulars | Norms |
|---|---|---|
| 1 | Initial Listing Fees | NIL |
| 2 | Annual Listing Fee for tenure of the scheme | Payable per 'month or part thereof' |
| (i) | Issue size up to Rs.50 Crs. | Rs.1,000/- |
| (ii) | Above Rs.50 Crs.and up to Rs.100 Crs. | Rs.2,000/- |
| (iii) | Above Rs.100 Crs.and up to Rs.300 Crs. | Rs.3,600/- |
| (iv) | Above Rs.300 Crs.and up to Rs.500 Crs. | Rs.5,900/- |
| (v) | Above Rs.500 Crs.and up to Rs. 1000 Crs. | Rs.9,800/- |
| (vi) | Above 1000 Crs. | Rs.15,600/- |
| **Note:**<br>1. For tenure beyond One month, fees are payable for one month or any part thereof.<br>2. Asset Under Management (AUM) of all such listed schemes of the Fund House exceed Rs. 10,000 crs, discount of 10% will be offered on future annual listing fees for all listed schemes of that Fund House. For eligibility of 10% discount on listing fees, the corpus of AUM will be taken as on March 31st of every year. | | |

**Applicability**

The above schedule of Listing Fee is uniformly applicable for all companies irrespective of whether BSE is the designated stock exchange or not.

**9. Compliance with the Listing Agreement**

Companies desirous of getting their securities listed at BSE are required to enter into an agreement with BSE called the Listing Agreement, under which they are required to make certain disclosures and perform certain acts, failing which the company may face some disciplinary action, including suspension/delisting of securities. As such, the Listing Agreement is of great importance and is executed under the common seal of a company. Under the Listing Agreement, a company undertakes, amongst other things, to provide facilities for prompt transfer, registration, sub-division and consolidation of securities; to give proper notice of closure of transfer books and record dates, to forward 6 copies of unabridged Annual Reports, Balance Sheets and Profit and Loss Accounts to BSE, to file shareholding patterns and financial results on a quarterly basis; to intimate promptly to the Exchange the happenings which are likely to materially affect the financial performance of the Company and its stock prices, to comply with the conditions of Corporate Governance, etc. The Listing Department of BSE monitors the compliance by the companies with the provisions of the Listing Agreement, especially with regard to timely payment of annual listing fees, submission of results, shareholding patterns and corporate governance reports on a quarterly basis. Penal action is taken against the defaulting companies.

**10. Cash Management Services (CMS) - Collection of Listing Fees**

In order to simplify the system of payment of listing fees, BSE has entered into an arrangement with HDFC Bank for collection of listing fees from 141 locations all over the country.

## 5.13 Summary

Stock Exchanges play a vital role in the consolidation of a national economy in general and in the development of industrial sector in particular. It is the most dynamic and organized component of securities market. Especially, in developing countries like India, the stock exchanges play a prime role in promoting the level of capital formation through effective mobilization of savings and ensuring investment safety.

Most of the trading in the Indian stock market takes place on its two stock exchanges: the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). The BSE has been in existence since 1875. The NSE, on the other hand, was founded in 1992 and started trading in 1994. However, both exchanges follow the same trading mechanism, trading hours, settlement process, etc. At the last count, the BSE had about 4,700 listed firms, whereas the rival NSE had about 1,200. Out of all the listed firms on the BSE, only about 500 firms constitute more than 90% of its market capitalization; the rest of the crowd consists of highly illiquid shares.

Almost all the significant firms of India are listed on both the exchanges. NSE enjoys a dominant share in spot trading, with about 70% of the market share, as of 2009, and almost a complete monopoly in derivatives trading, with about a 98% share in this market, also as of 2009. Both exchanges compete for the order flow that leads to reduced costs, market efficiency and innovation. The presence of arbitrageurs keeps the prices on the two stock exchanges within a very tight range.

## 5.14 Self Assessment Questions

1. What is the difference between a primary and secondary market? Are they related in any way?
2. What is stock exchange? Explain its features.
3. What is the function of stock exchange? How it help in capital formation in economy?
4. Write short notes on:
   a) NSE
   b) OTCEI
   c) Securities market
5. Discuss the benefits of stock exchanges.
6. What do you mean by listing of securities?

## 5.15 References Books


- Pandian, Punithavathy: Security Analysis and Portfolio Management, Himalaya Publishing House Private Limited
- Singh, Rohini: Security Analysis and Portfolio Management, Excel Books
- Kevin, S.: Security Analysis and Portfolio Management, PHI Learning Private Limited
- Ranganatham, M. and Madhumati, R.: Security Analysis and Portfolio Management, Pearson India
- Securities Market Basic Module, NCFM
- Fischer Donald E, & Jordan Ronald J: Security Analysis and Portfolio Management, Prentice-Hall

# Annexure I
## List of Indian Stock Exchanges

| Sr. No. | Name of the Exchange | Valid Upto |
|---|---|---|
| 1 | Ahmedabad Stock Exchange Ltd. | PERMANENT |
| 2 | BSE Ltd. | PERMANENT |
| 3 | Bangalore Stock Exchange Ltd. | PERMANENT |
| 4 | Bhubaneswar Stock Exchange Ltd | 04-JUN-2014 |
| 5 | Calcutta Stock Exchange Ltd. | PERMANENT |
| 6 | Cochin Stock Exchange Ltd | 07-NOV-2013 |
| 7 | Delhi Stock Exchange Ltd. | PERMANENT |
| 8 | Gauhati Stock Exchange Ltd. | 30-APR-2013 |
| 9 | Inter-Connected Stock Exchange of India Limited | 17-NOV-2013 |
| 10 | Jaipur Stock Exchange Ltd | 08-JAN-2014 |
| 11 | Ludhiana Stock Exchange Ltd. | 27-APR-2014 |
| 12 | MCX SX Exchange Limited | 15-SEP-2014 |
| 13 | Madhya Pradesh Stock Exchange Ltd. | PERMANENT |
| 14 | Madras Stock Exchange Ltd. | PERMANENT |
| 15 | Magadh Stock Exchange Ltd. | "SEBI vide order dated September 3, 2007 refused to renew the recognition granted to Magadh Stock Exchange Ltd." |
| 16 | Mangalore Stock Exchange | As per Securities Appellete Tribunal order dated October 4, 2006, the Mangalore Stock Exchange is a de-recognized Stock Exchange under Section 4 (4) of SCRA |
| 17 | National Stock Exchange of India Ltd. | PERMANENT |
| 18 | OTC Exchange of India | 22-AUG-2014 |
| 19 | Pune Stock Exchange Ltd. | 01-SEP-2014 |
| 20 | The Vadodara Stock Exchange Ltd. | 03-JAN-2014 |
| 21 | U.P. Stock Exchange Limited | 02-JUN-2014 |
| 22 | United Stock Exchange of India Limited | 21-MAR-2014 |

**Note:** The Hyderabad Securities and Enterprises Ltd (erstwhile Hyderabad Stock Exchange), Coimbatore Stock Exchange Ltd and Saurashtra Kutch Stock Exchange Ltd have been granted exit by SEBI vide order dated January 25, 2013, April 4, 2013 and April 5, 2013 respectively.

***Source: SEBI***

# Unit-6 Stock Market Indices

## Structure of Unit



## 6.0 Objectives

After completing this unit, you would be able to:

- Understand what is stock market indices;
- Classify the different indices;
- Know about the computation of stock index;
- Identify the differences in stock market indices.

## 6.1 Introduction

Conventionally, indices have been used as benchmarks to observe markets and review performance. Stock market indices are the barometers of the stock market. They mirror the stock market behavior. Present day indices were first proposed by two mathematicians Etienne Laspeyres and Hermann Paasche in 19th century. The father of all equity indices is the Dow Jones Industrial Average which was first published in 1896 by Charles Dow; since then indices have come a long way - not only in their complexity - but also in the variety.

The most popular index in financial market is the stock index which uses a set of stocks that are representative of the whole market, or a specified sector, to measure the change in overall behavior of the markets or sector over a period of time. It is not possible for everyone to look at the prices of each and every stock to find out whether the market movement is upward or downward and therefore indices give a broad outline of the market movement and represent the market.

## 6.2 What is Stock Market Index?

Indices are a method of measuring the value of a market segment. It is computed from the prices of selected stocks generally on the basis of weighted average. A stock market index is therefore a measure of the relative value of a group of stocks in numerical terms. As the stocks within an index change value, the index value changes. An index is important to measure the performance of investments against a relevant market index. It is a tool used by investors and financial managers to describe the market, and to compare the return on specific investments. The best known indices measure the performance of stock markets. An index is a mathematical construct, so no investor can invest in it directly. However, there are index funds that attempt to resemble the development of indices.

An index is used to give information about the price movements of products in the financial, commodities or any other markets. Financial indexes are constructed to measure price movements of stocks, bonds, T-bills and other forms of investments. Stock market indexes are meant to capture the overall behavior of equity markets. A stock market index is created by selecting a group of stocks that are representative of the whole market or a specified sector or segment of the market. An index is calculated with reference to a base period and a base index value. There are three main types of indices, namely price index, quantity index and value index. The price index is most widely used. It measures changes in the levels of prices of products in the financial, commodities or any other markets from one period to another.

**Stock market indexes are helpful for a variety of reasons. Some of them are:**

a) They provide a historical comparison of returns on money invested in the stock market against other forms of investments such as gold or debt.
b) They can be used as a standard against which to compare the performance of an equity fund.
c) It is a lead indicator of the performance of the overall economy or a sector of the economy
d) Stock indexes reflect highly up to date information
e) Modern financial applications such as Index Funds, Index Futures, Index Options play an important role in financial investments and risk management.

## 6.3 Importance of Stock Market Indices

a) **Indicator of performance:** Indices help to recognize the broad trends in the market as the lead indicator of the performance of the overall economy or a sector of the economy.

b) **Barometer for market behavior:** It is used to monitor and measure market movements, whether in real time, daily, or over decades, and thus helps us to understand economic conditions and future prospects. Therefore, it functions as a status report of the general economic conditions. Impacts of the various economic policies are also reflected on the stock market can be easily viewed from the performance of market indices.

c) **Benchmark for portfolio performance:** A managed fund can communicate its objectives and target universe by stating which index or indices serve as the standard against which its performance should be judged. Index can be used as a benchmark for evaluating the investors' portfolio. The investor can also use the indices to allocate funds rationally among stocks. To earn returns on par with the market returns, he can choose the stocks that reflect the market movement.

d) **Underlying for other instruments:** Index funds and futures are formulated with the help of the indices. Usually fund managers construct portfolios to follow any one of the major stock market index. It also underpins products such as, exchange-traded funds, index funds etc. These indexes - related products form a several trillion dollar business and are used widely in investment, hedging and risk management. Example, ICICI has floated ICICI index bonds. The return of the bond is linked with the index movement.

e) **Supports research:** It also supports research, risk measurement and management; and asset allocation. Like technical analysts studying the historical performance of the indices and predict the future movement of the stock market. The relationship between the individual stock and index predicts the individual share price movement.

In addition to the above functional use, a stock index reflects changing expectations of the market about future of the corporate sector. The index rises if the market expects the future to be better than previously expected and drops if the expectation about future becomes pessimistic. Price of a stock moves for two reasons, namely, company specific development (product launch, closure of a factory, arrest of chief executive) and development affecting the general environment (financial crisis, election result, budget announcement), which affects the stock market as a whole. The stock index captures the second part, that is, impact of environmental change on the stock market as a whole. This is achieved by averaging which cancels out changes in prices of individual stocks.

## 6.4 Computation of Index number

An index is a summary measure that indicates changes in value(s) of a variable or a set of variables over a time or space. It is generally computed by finding the ratio of current values(s) to a reference (base) value(s) and multiplying the resulting number by 100 or 1000. For example, a stock market index is a number that indicates the relative level of prices or value of securities in a market on a particular day compared with a base-day price or value figure, which is usually 100 or 1000.

Illustration: The values of a market portfolio at the close of trading on Day 1 and Day 2 are:

| Day | Value of Portfolio | Index Value |
|---|---|---|
| 1 (base day) | Rs 15,000 | 1000 |
| 2 | Rs 25,000 | 1666.67 |

Assume that Day 1 is the base day and the value assigned to the base day index is 1000. On Day 2 the value of the portfolio has changed from Rs. 15,000 to Rs. 25,000, a 66.67% increase. The value of the index on Day 2 should reflect a corresponding 66.67% increase in market value.

Thus,

$$\text{Index on Day2} = \frac{\text{Portfolio value of Day 2} * \text{Index Value of Base day}}{\text{Portfolio Value of Base Day}}$$

Day 2's index is 1666.67 as compared to the 1000 of day 1.

The above illustration only gives out as an introduction to how an index is constructed. The daily computation of a stock index have more complexity especially when there are changes in market capitalization of constituent stocks, e.g., rights offers, stock dividend etc.

## 6.5 Features of Index

A good stock market index should have the following features:

a) **Confining behavior of portfolios:** A good market index should accurately reflect the behavior of the overall market as well as of different portfolios. This is accomplished by diversification of portfolio in such a manner that it is not susceptible to any individual stock or industry risk. A well-diversified index is more representative of the market. However, there are diminishing returns from diversification. There is very little gain by diversifying beyond a point. Including illiquid stocks in fact worsens the index because it does not reflect the current price

behavior of the market, thus its inclusion in index results delayed or out of date price behavior rather than current price behavior of the market. Hence a good index should include the stocks which best represent the universe.

b) **Including liquid stocks:** Liquidity is much more as reflected by trading frequency. It is about ability to transact at a price, which is very close to the current market price. For example, when the market price of a stock is at Rs.320, it will be considered liquid if one can buy some shares at around Rs.320.05 and sell at around Rs.319.95. A liquid stock has very tight bid-ask spread.

c) **Continuous evaluation:** An index could not remain constant. It reflects the market dynamics and hence changes are essential to maintain its representative character. This necessarily means that the same set of stocks would not satisfy index criteria at all times. A good index methodology must therefore incorporate a steady pace of change in the index set. It is crucial that such changes are made at a steady pace. Therefore, the index set should be reviewed on a regular basis and, if required, changes should be made to ensure that it continues to reflect the current state of market.

## 6.6 Methodology for Index Construction

**The commonly used methods for constructing indices are -**

a) **Price weighted method:** A stock index in which each stock influences the index in proportion to its price per share. The value of the index is generated by adding the prices of each of the stocks in the index and dividing them by the total number of stocks. Stocks with a higher price will be given more weight and, therefore, will have a greater influence over the performance of the index. Therefore, it is computed by summing up the prices, of the various securities included in the index, at time 1, and dividing it by the sum of prices of the securities at time 0 multiplied by base index value. Each stock is assigned a weight proportional to its price. For example, Dow Jones Industrial Average and Nikkei 225.

b) **Equally weighted method:** An equally weighted index weights each stock equally regardless of its market capitalization or economic size (sales, earnings, book value). Due to daily price movements of the stocks within the index, the portfolio must be constantly re-balanced to keep the positions in each stock equal to each other. The smallest companies are given equal weight to the largest companies in an equal-weight index fund or portfolio. This allows all of the companies to be considered on an even playing field. The Rydex S&P Equal Weight Exchange Traded Fund, for example, provides the same exposure to the smallest companies in the S&P 500 as it does to corporate giants such as General Electric and Exxon.

c) **Market capitalization or value weighted method:** The most commonly used weight is market capitalization (MC), that is, the number of outstanding shares multiplied by the share price at some specified time. A type of market index whose individual components are weighted according to their market capitalization, so that larger components carry a larger percentage weighting. The value of a capitalization-weighted index can be computed by adding up the collective market capitalizations of its members and dividing it by the number of securities in the index. The same price movement for large company will influence the value of the index more than a small company and have a dramatic effect on the value of the index. So some investors feel that this overweighting toward the larger companies gives a distorted view of the market, but the fact that the largest companies also have the largest shareholder bases makes the case for having the higher relevancy in the index. The advantage of market capitalization weighted indices over others is that stock splits and other capital adjustments are automatically taken care of. NASDAQ Composite, NASDAQ-100, NYSE Composite, FTSE-100, Hang Seng Index in Hong Kong, RTS Index, Russell 2000, S&P 500 - Now float-weighted, SENSEX in India are some of the examples of market capitalization weighted method.

d) **Free-float market capitalization:** Free-float methodology market capitalization is calculated by taking the equity's price and multiplying it by the number of shares readily available in the market. Instead of using all of the shares outstanding like the full-market capitalization method, the free-float method excludes locked-in shares such as those held by promoters and governments. The free-float method is seen as a better way of calculating market capitalization because it provides a more accurate reflection of market movements. When using a free-float methodology, the resulting market capitalization is smaller than what would result from a full-market capitalization method. Free-float methodology has been adopted by most of the world's major indexes, including the Dow Jones Industrial Average and the S&P 500.

**Difficulties in index construction:**

The major difficulties encountered in constructing an appropriate index are:

- deciding the number of stocks to be included in the index,
- selecting stocks to be included in the index,
- selecting appropriate weights, and
- selecting the base period and base value.

## 6.7 Summary

Stock market indices are an important part of the economy of a country. They reflect the stock market behavior. They play a pivotal role in the growth of the industry and commerce of the country that eventually affects the economy of the country to a great extent. That is reason that the government, industry and even the central banks of the country keep a close watch on the happenings of the stock market indices. The stock market indices are important from both the industry's point of view as well as the investor's point of view. There are various methods of computing the index composition and they have their own advantages and disadvantages. The indices also differ from each other on the basis of the number, the composition of stocks, weights and base year.

## 6.8 Self Assessment Questions

1. Why do stock market indices are required? How are they buit?
2. Explain the difficulties in index construction.
3. Name some of the well-known national and international stock indices and explain their method of construction.
4. Discuss the use and importance of stock market indices.

## 6.9 Reference Books


- Pandian, Punithavathy: Security Analysis and Portfolio Management, Himalaya Publishing House Private Limited
- Singh, Rohini: Security Analysis and Portfolio Management, Excel Books
- Kevin, S.: Security Analysis and Portfolio Management, PHI Learning Private Limited
- Ranganatham, M. and Madhumati, R.: Security Analysis and Portfolio Management, Pearson India
- Fischer Donald E, & Jordan Ronald J: Security Analysis and Portfolio Management, Prentice-Hall
- Securities Market Basic Module, NCFM

# Annexure I

## List of Indices

***Source: BSE & NSE official website***

| BSE | NSE |
|---|---|
| **Broad Indices** | **Broad indices** |
| S&P BSE SENSEX | CNX Nifty |
| S&P BSE MID CAP | CNX Nifty Junior |
| S&P BSE SMALL CAP | LIX 15 (liquid stocks index) |
| S&P BSE 100 | CNX 100 |
| S&P BSE 200 | CNX 200 |
| S&P BSE 500 | CNX 500 |
| **Investment Strategy Indices** | CNX Midcap* |
| S&P BSE IPO | Nifty Midcap 50 |
| S&P BSE SME IPO | CNX Smallcap Index |
| S&P BSE DOLLEX 30 | CNX Midcap 200 ** |
| S&P BSE DOLLEX 100 | India Vix (India VIX is a volatility index based on the NIFTY Index Option prices) |
| S&P BSE DOLLEX 200 | **Sectoral Indices** |
| **Volatility Indices** | CNX Auto Index |
| S&P BSE REALVOL-1MTH | CNX Bank Index |
| S&P BSE REALVOL-2MTH | CNX Energy Index |
| S&P BSE REALVOL-3MTH | CNX Finance Index |
| **Thematic Indices** | CNX FMCG Index |
| S&P BSE GREENEX | CNX IT Index |
| S&P BSE CARBONEX | CNX Media Index |
| Sectoral Indices | CNX Metal Index |
| S&P BSE AUTO | CNX Pharma Index |
| S&P BSE BANKEX | CNX PSU Bank Index |
| S&P BSE CAPITAL GOODS | CNX Realty Index |
| S&P BSE CONSUMER DURABLES | IISL CNX Industry Indice |
| S&P BSE FMCG | **Thematic indices** |
| S&P BSE HEALTHCARE | CNX Commodities Index |
| S&P BSE IT | CNX Consumption Index |
| S&P BSE METAL | CNX Infrastructure Index |

| | |
|---|---|
| S&P BSE OIL & GAS | CNX MNC Index |
| S&P BSE POWER | CNX PSE Index |
| S&P BSE PSU | CNX Service Sector Index |
| S&P BSE REALTY | CNX Nifty Shariah / CNX 500 Shariah |
| S&P BSE TECK | **Strategy indices** |
| | CNX 100 Equal Weight |
| | CNX Alpha Index |
| | CNX Defty |
| | CNX Dividend Opportunities Index |
| | CNX High Beta Index |
| | CNX Low Volatility Index |
| | CNX Nifty Dividend |

# Unit- 7 Regulatory System of Security Market

**Structure of Unit**



## 7.0 Objectives

This unit deals with legislative and regulatory provisions relevant for Securities Market in India and this will help to understand how the stock market operates.

## 7.1 Introduction

**Legislations**

The five main legislations governing the securities market are: (a) the Securities Contracts (Regulation) Act, 1956, preventing undesirable transactions in securities by regulating the business of dealing in securities; (b) the Companies Act, 1956, which is a uniform law relating to companies throughout India; (c) the SEBI Act, 1992 for the protection of interests of investors and for promoting development of and regulating the securities market; (d) the Depositories Act, 1996 which provides for electronic maintenance and transfer of ownership of dematerialised securities and (e) the Prevention of Money Laundering Act, 2002 which prevents money laundering and provides for confiscation of property derived from or involved in money laundering.

**Rules and Regulations**

The Government has framed rules under the Securities Contracts (Regulation) Act, 1956, SEBI Act, 1992 and the Depositories Act. The SEBI has framed regulations under the

SEBI Act and the Depositories Act for registration and regulation of all market intermediaries, for prevention of unfair trade practices, insider trading, etc. Under these Acts, Government and SEBI issue notifications, guidelines, and circulars, which need to be complied with by market participants. The self - regulatory organizations (SROs) like stock exchanges have also laid down their rules and regulations for market participants. The regulator has to ensure that the market participants behave in a desired manner so that securities market continue to be a major source of finance for corporate and government while protecting the interest of investors.

**Regulators**

The responsibility for regulating the securities market is shared jointly by Department of Economic Affairs (DEA), Department of Company Affairs (DCA), Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI) and Appellate Tribunal (SAT). The regulators ensure that the market participants behave in a desired manner so that the securities market continue to be a major source of finance for corporates and government and the interest of investors are protected. The activities of all these agencies are coordinated by a High Level Committee on Capital Markets. Most of the powers under the SCRA are exercisable by DEA while a few others by SEBI and some are concurrently by them. The regulation of the contracts for sale and purchase of securities, gold related securities, money market securities and securities derived from these securities and ready forward contracts in debt securities are exercised concurrently with the RBI. The SEBI Act and the Depositories Act are mostly administered by SEBI.

While the rules under the securities laws are framed by government, regulations are framed by SEBI. The powers under the Companies Act relating to issue and transfer of securities and non-payment of dividend are administered by SEBI in case of listed public companies and public companies proposing to get their securities listed. The SROs ensure compliance of market participants with their own rules as well as with the rules relevant for them under the securities laws.

## 7.2 Securities Contracts (Regulation) Act, 1956

The Securities Contracts (Regulation) Act, 1956 provides for direct and indirect control of virtually all aspects of securities trading and the running of stock exchanges and aims to prevent undesirable transactions in securities. It gives Central Government regulatory jurisdiction over (a) stock exchanges through a process of recognition and continued supervision, (b) contracts in securities, and (c) listing of securities on stock exchanges. All the three are discussed subsequently in this section. The Securities Contracts (Regulation) Act, 1956 was enacted to prevent undesirable transactions in securities by regulating the business of dealing therein and by providing for certain other matters

connected therewith. This is the principal Ac t, which governs the trading of securities in India. As a condition of recognition, a stock exchange complies with conditions prescribed by Central Government. Organized trading activity in securities takes place on a recognized stock exchange.

## Key Definitions

**Recognized Stock Exchange**:

It means a stock exchange, which is for the time being recognized by the Central Government under Section 4 of the Securities Contracts (Regulation) Act, 1956.

**Stock Exchange means:**

(a) anybody of individuals, whether incorporated or not, constituted before corporatization and demutualization under sections 4A and 4B, or

(b) a body corporate incorporated under the Companies Act, 1956 (1 of 1956) whether under a scheme of corporatization and demutualization or otherwise, for the purpose of assisting, regulating or controlling the business of buying, selling or dealing in securities.

**Securities: As per Section 2(h), the term "securities" include-**

(i) shares, scrips, stocks, bonds, debentures, debenture stock or other marketable securities of a like nature in or of any incorporated company or other body corporate,

(ii) derivative,

(iii) units or any other instrument issued by any collective investment scheme to the investors in such schemes,

(iv) Security receipts as defined in clause (zg) of section 2 of the Securisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act 2002 (SARFAESI)

(v) units or any other such instrument is sued to the investors under any mutual fund scheme,

(vi) any certificate or instrument issued to an investor by any issuer being a special purpose distinct entity which possesses any debt or receivable, including mortgage debt, assigned to such entity, and acknowledging beneficial interest of such investor in such debt or receivable, including mortgage debt, as the case maybe.

(vii) government securities,

(viii) such other instruments as may be declared by the Central Government to be securities, and

(ix) rights or interests in securities.

**Derivatives: As per section 2(aa), "Derivative" includes**

(i) a security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security;

(ii) a contract which derives its value from the prices, or index of prices, of underlying securities;

Further, Section 18A provides that notwithstanding anything contained in any other law for the time being in force, contracts in derivative shall be legal and valid if such contracts are (a) traded on a recognized stock exchange; and (b) settled on the clearing house of the recognized stock exchange, in accordance with the rules and bye- laws of such stock exchanges, in accordance with the rules and bye- laws of such stock exchange.

**Spot delivery contract: Defined in Section 2(i) to mean a contract which provides for-**

(a) actual delivery of securities and the payment of a price there for either on the same day as the date of the contract or on the next day, the actual period taken for the dispatch of the securities or the remittance of money there for through the post being excluded from the computation of the period aforesaid if the parties to the contract do not reside in the same town or locality;

(b) transfer of the securities by the depository from the account of a beneficial owner to the account of another beneficial owner when such securities are dealt with by a depository.

As mentioned earlier, the Securities Contracts (Regulation) Act, 1956 deals with-

1. stock exchanges, through a process of recognition and continued supervision,
2. contracts & options in securities, and
3. listing of securities on stock exchanges.

**Recognition of Stock Exchanges**

By virtue of the provisions of the Act, the business of dealing in securities cannot be carried out without registration from SEBI. Any Stock Exchange which is desirous of being recognized has to make an application under Section 3 of the Act to SEBI, which is empowered to grant recognition and prescribe conditions. This recognition can be withdrawn in the interest of the trade or public.

Section 4A of the Act was added in the year 2004 for the purpose of corporatization and demutualization of stock exchange. Under section 4A of the Act, SEBI by notification in the official gazette may specify an appointed date on and from which date all recognized stock exchanges have to corporatize and demutualise their stock exchanges. Each of the

recognized stock exchanges which have not already being corporatized and demutualised by the appointed date are required to submit a scheme for corporatization and demutualization for SEBI's approval. After receiving the scheme SEBI may conduct such enquiry and obtain such information as may be required by it and after satisfying that the scheme is in the interest of the trade and also in the public interest, SEBI may approve the scheme.

SEBI is authorized to call for periodical returns from the recognized Stock Exchanges and make enquiries in relation to their affairs. Every Stock Exchange is obliged to furnish annual reports to SEBI. Recognized Stock Exchanges are allowed to make bylaws for the regulation and control of contracts but subject to the previous approval of SEBI and SEBI has the power to amend the said bylaws. The Central Government and SEBI have the power to supersede the governing body of any recognized stock exchange. The Central Government and SEBI also have power to suspend the business of the recognized stock exchange to meet any emergency as and when it arises, by notifying in the official gazette.

**Contracts and Options in Securities**

Organized trading activity in securities takes place on a recognized stock exchange. If the Central Government is satisfied, having regard to the nature or the volume of transactions in securities in any State or States or area, that it is necessary so to do, it may, by notification in the Official Gazette, declare provisions of section 13 to apply to such State or States or area, and thereupon every contract in such State or States or area which is entered into after date of the notification otherwise than between members of a recognized stock exchange or recognized in stock exchanges in such State or States or area or through or with such member shall be illegal. The effect of this provision clearly is that if a transaction in securities has to be validly entered into, such a transaction has to be either between the members of a recognized stock exchange or through a member of a Stock Exchange.

**Listing of Securities**

Where securities are listed on the application of any person in any recognized stock exchange, such person shall comply with the conditions of the listing agreement with that stock exchange (Section 21). Where a recognized stock exchange acting in pursuance of any power given to it by its bye- laws, refuses to list the securities of any company, the company shall be entitled to be furnished with reasons for such refusal and the company may appeal to Securities Appellate Tribunal (SAT) against such refusal.

**Delisting of Securities**

A recognized stock exchange may delist the securities of any listed companies on such grounds as are prescribed under the Act. Before delisting any company from its exchange, the recognized stock exchange has to give the concerned company a reasonable opportunity of being heard and has to record the reasons for delisting that concerned company. The concerned company or any aggrieved investor may appeal to SAT against such delisting (Section 21A).

## 7.3 Companies Act, 1956

It deals with issue, allotment and transfer of securities and various aspects relating to company management. It provides for standards of disclosure in the public issues, particularly in the fields of company management and projects, information about other listed companies under the same management, and management perception of risk factors. It also regulates underwriting, the use of premium and discounts on issues, rights and bonus issues, payment of interest and dividends, supply of annual report and other information.

## 7.4 Securities and Exchange Board of India Act, 1992

The law relating to securities in India was contained in different enactments like Companies Act, 1956, Securities Contracts (Regulation) Act, 1956 and the Capital Issues (Control) Act, 1947 (which has now been repealed). Capital Issues (Control) Act, 1947 had its origin during the war in 1943 when the objective was to channel resources to support the war effort. It was retained with some modifications as a means of controlling the raising of capital by companies and to ensure that national resources were channeled into proper lines, i.e., for desirable purposes to serve goals and priorities of the government, and to protect the interests of investors. Under the Act, any firm wishing to issue securities had to obtain approval from the Central Government, which also determined the amount, type and price of the issue. As a part of the liberalization process was the repeal of the Capital Issues (Control) Act, 1947, in May 1992. With this, Government's control over issues of capital, pricing of the issues, fixing of premium and rates of interest on debentures etc. ceased, and the office which administered the Act was abolished and the market was allowed to allocate resources to competing uses.

It was also found that the legislation in this regard was scattered in different laws and the administrative agencies did not have proper manpower or expertise to ensure a fair deal to investors. There was no monitoring or prosecuting machinery to check malpractices, insider trading, uncontrolled market pricing etc. There was also a need to regulate mutual funds and venture capital. Realizing the need to promote a healthy and growth - oriented securities market the Government of India established the Securities and

Exchange Board of India (SEBI) as an administrative body which functioned under the administrative control of the Ministry of Finance of the Central Government by a resolution of the Department of Economic Affairs in the Ministry of Finance.

It was proposed that this administrative body would be a precursor to the statutory Board (SEBI) with which it would be ultimately merged. Thereafter SEBI was established as a statutory authority through an Ordinance promulgated on 30.01.1992 by the President of India. On 30.03.1992 a Bill was introduced in the Parliament to replace the said Ordinance which was approved by both the Houses of Parliament on 01.04.1992 and was assented to by the President on 04.04.1992. The statute was deemed to have come into force from the date on which the Ordinance was promulgated i.e. 30.01.1992.

**Purpose of the Act**

The purpose of the SEBI Act is to provide for the establishment of a Board called Securities and Exchange Board of India (SEBI, for short). The Preamble to the Act provides for the establishment of a Board to:

(i) Protect the interests of investors in securities,

(ii) Promote the development of the securities market,

(iii) To regulate the securities market, and

(iv) For matters connected therewith or incidental thereto.

The statement, of objects and reasons appended to SEBI Bill, 1992 states that SEBI which was first established in 1988 through a Government resolution to promote orderly and healthy growth of the securities market and for investors' protection has been monitoring the activities of stock exchanges, mutual funds and merchant bankers etc., to achieve these goals.

**Regulatory Jurisdiction**

Its regulatory jurisdiction extends over companies listed on Stock Exchanges and companies intending to get their securities listed on any recognized stock exchange in the issuance of securities and transfer of securities, in addition to all intermediaries and persons associated with securities market. SEBI can specify the matters to be disclosed and the standards of disclosure required for the protection of investors in respect of issues; can issue directions to all intermediaries and other persons associated with the securities market in the interest of investors or of orderly development of the securities market; and can conduct enquiries, audits and inspection of all concerned and adjudicate offences under the Act.

In other words, it has been given necessary autonomy and authority to regulate and develop an orderly securities market. All the intermediaries and persons associated with

securities market, viz., brokers and sub-brokers, underwriters, merchant bankers, bankers to the issue, share transfer agents and registrars to the issue, depositories, Participants, portfolio managers, debentures trustees, foreign institutional investors, custodians, venture capital funds, mutual funds, collective investments schemes, credit rating agencies, etc., shall be registered with SEBI and shall be governed by the SEBI Regulations pertaining to respective market intermediary.

**Constitution of SEBI**

The Central Government has constituted a Board by the name of SEBI under Section 3 of SEBI Act. The head office of SEBI is in Mumbai. SEBI may establish offices at other places in India. SEBI consists of the following members, namely:-

(a) a Chairman;
(b) two members from amongst the officials of the Ministry of the Central Government dealing with Finance and administration of Companies Act, 1956;
(c) one member from amongst the officials of the Reserve Bank of India;
(d) five other members of whom at least three shall be whole time members to be appointed by the Central Government.

The general superintendence, direction and management of the affairs of SEBI vests in a Board of Members, which exercises all powers and do all acts and things which may be exercised or done by SEBI.

**Functions of SEBI**

SEBI has been required to protect the interests of the investors in securities and to promote and development of, and to regulate the securities market by such measures as it thinks fit. The measures referred to therein may provide for: -

(i) regulating the business in stock exchanges and any other securities markets;

(ii) registering and regulating the working of stock brokers, sub- brokers, share transfer agents, bankers to an issue, trustees of trust deeds, registrars to an issue, merchant bankers, underwriters, portfolio managers, investment advisers and such other intermediaries who may be associated with securities markets in any manner;

(iii) registering and regulating the working of the depositories, participants, custodians of securities, foreign institutional investors, credit rating agencies and such other intermediaries as SEBI may, by notification, specify in this behalf;

(iv) registering and regulating the working of venture capital funds and collective investment schemes including mutual funds;

(v) promoting and regulating self - regulatory organisations;

(vi) prohibiting fraudulent and unfair trade practices relating to securities markets;

(vii) promoting investors' education and training of intermediaries of securities markets;

(viii) prohibiting insider trading in securities;

(ix) regulating substantial acquisition of shares and take - over of companies;

(x) calling for information from, undertaking inspection, conducting inquiries and audits of the stock exchanges, mutual funds, other persons associated with the securities market, intermediaries and self- regulatory organisations in the securities market;

(xi) calling for information and record from any bank or any other authority or board or corporation established or constituted by or under any Central, State or Provincial Act in respect of any transaction in securities which is under investigation or inquiry by the Board;

(xii) performing such functions and exercising according to Securities Contracts (Regulation) Act, 1956, as may be delegated t o it by the Central Government;

(xiii) levying fees or other charges for carrying out the purpose of this section;

(xiv) conducting research for the above purposes;

(xv) calling from or furnishing to any such agencies, as may be specified by SEBI, such information as may be considered necessary by it for the efficient discharge of its functions;

(xvi) performing such other functions as may be prescribed.

SEBI may, for the protection of investors, (a) specify, by regulations for (i) the matters relating to issue of capital, transfer of securities and other matters incidental thereto; and (ii) the manner in which such matters, shall be disclosed by the companies and (b) by general or special orders : (i) prohibit any company from issuing of prospectus, any offer document, or advertisement soliciting money from the public for the issue of securities, (ii) specify the conditions subject to which the prospectus, such offer document or advertisement, if not prohibited may be issued (Section 11A).

SEBI may issue directions to any person or class of persons referred to in section 12, or associated with the securities market or to any company in respect of matters specified in section 11A. If it is in the interest of investors, or orderly development of securities market to prevent the affairs of any intermediary or other persons referred to in section 12 being conducted in a manner detrimental to the interests of investors or securities market to 241 secure the proper management of any such intermediary or person (Section 11B).

## 7.5 The Depositories Act, 1996

The Depositories Act, 1996 was enacted to provide for regulation of depositories in securities and for matters connected therewith or incidental thereto. It came into force from 20th September, 1995. It also provides for the establishment of depositories for securities to ensure transferability of securities with speed, accuracy and security. For this, these provisions have been made: (a) making securities of public limited companies freely transferable subject to certain exceptions; (b) dematerializing the securities in the depository mode; and (c) providing for maintenance of ownership records in a book entry form. In order to streamline the settlement process, the Act envisages transfer of ownership of securities electronically by book entry without moving the securities from persons to persons. The Act has made the securities of all public limited companies freely transferable, restricting the company's right to use direction in effecting the transfer of securities, and the transfer deed and other procedural requirements under the Companies Act have been dispensed with.

**Certificate of Commencement of Business**

No depository shall act as a depository unless it obtains a certificate of commencement of business from SEBI.

The Act provides for establishment of one or more depositories. Every depository is required to be registered with the Securities and Exchange Board of India (SEBI) and will have to obtain a Certificate for commencement of business on fulfillment of such conditions as may be prescribed. The Board shall not grant it certificate under sub-section (1) unless it is satisfied that the depository has adequate systems and safeguards to prevent manipulation of records and transactions.

Investors opting to join the system will be required to be registered with one or more participants who will be the agents for the depository. Investors will have the choice of continuing with the existing securities certificates or opt for the depository mode. Under Section 3 (1) of the Act the depository is required to obtain a certificate of commencement of business from the Securities and Exchange Board of India. According to subsection 3 the Board shall not grant a certificate under sub-section (1) unless it is satisfied that the depository has adequate systems and safeguards to prevent manipulation of records and transactions.

The Depository Act provides for the establishment of depositories like the National Securities Depository Limited (NSDL) and the Central Depository Services Limited providing depository services in the electronic form for securities traded in equity and debt markets.

Every depository must have adequate mechanisms for reviewing, monitoring and evaluating the depository's controls, systems, procedures and safeguards. It should conduct an annual inspection of these procedures and forward a copy of the inspection report to SEBI. The depository is also required to ensure that the integrity of the automatic data processing systems is maintained at all times and take all precautions necessary to ensure that the records are not lost, destroyed or tampered with. In the event of loss or destruction, sufficient back up of records should be available at a different place. Adequate measures should be taken, including insurance, to protect the interests of the beneficial owners against any risks. Every depository is required to extend all such co-operation to the beneficial owners, issuers, issuers' agents, custodians of securities, other depositories and clearing organizations, as is necessary for the effective, prompt and accurate clearance and settlement of securities transactions and conduct of business.

**Parties to a Depository**

In a depository system, the following parties are involved

(i) the depository,
(ii) the beneficial owner;
(iii) the participant;
(iv) the issuer.

A depository would render service connected with the recording of allotment of securities or transfer of ownership of securities in its record. The service is availed of by the beneficial owner of the securities which are eligible to be dealt with by the depository system and in respect of which the service is availed of. The beneficial ownership would be pertaining to the securities of an issuer i.e. a person making an issue of securities. Section 1(1) (j) defines 'registered owner' as a "depository whose name is entered as such in the name of issuer."

The participant means a person through whom the beneficial owner of the securities would avail of the depository service and is the custodial agencies like banks, financial institutions as well as large corporate brokerage firms.

**Agreement Between Depository and Participant**

A depository shall enter into an agreement with one or more participants as its agent. Any person, through a participant, may enter into an agreement, in such form as may be specified by the bye-laws, with any depository for availing its services. The relationship and dealings between the depository and the participant will be governed by an agreement and the participant is an agent of the depository vide Section 4 (1) of the Act.

Depository Participants includes brokers, banks, insurance companies, Stock Exchange clearing cells, the Reserve Bank of India, financial institutions, institutional managers, fund managers etc. Section 41 of the Companies Act lays down two modes of acquiring membership of a company and in both an entry of the name of a person as a member in the register of the members of the company is a condition precedent for a person to be regarded a member of the company. However to facilitate the beneficial owner of shares, on whose behalf the depository holds the shares, to be recognized as members, Section 41 in its new subsection 3 provides that every person holding equity share capital of a company and whose name is entered as a beneficial owner in the records of a depository shall be deemed to be a member of the concerned company.

Regulation 26 of the SEBI (Depositories and Participants) Regulations, 1996 states that depositories, participants, issuers, and issuers' agent, in addition to the rights and obligations laid down in the Depositories Act and the bye laws shall have the rights and obligations arising from the agreements entered into by them.

**Depositories to Indemnify Loss in Certain Cases**

Any loss caused to the beneficial owner due to the negligence of the depository or the participant, the depository shall indemnify such beneficial owner.

In order to protect the interests of the beneficial owners of the securities handled by the depository, section 16 of the Act seeks to require the depository to indemnify loss suffered by the beneficial owner due to the negligence of the depository or the participant. A sine qua non for claiming the compensation shall be 'negligence' on the part of the depository or the participant, as the case may be. Where loss due to the negligence of the participant is indemnified by the depository, the depository shall have the right to recover the same from such participant.

**Surrender of Certificate of Security**

Any person who has entered into an agreement under section 5 shall surrender the certificate of security, for which he seeks to avail the services of a depository, to the issuer in such manner as may be specified by the regulations.

The issuer, on receipt of certificate of security under sub- section (1), shall cancel the certificate of security and substitute in its records the name of the depository as a registered owner in respect of that security and inform the depository accordingly.

A depository shall, on receipt of information under sub-section (2), enter the name of the person referred to in sub-section (1) in its records, as the beneficial owner.

**Options to Receive Security Certificate or Hold Securities with Depository**

Every person subscribing to securities offered by an issuer shall have the option either to receive the security certificates or hold securities with a depository.

**Furnishing of Information and Records by Depository and Issuer**

Every depository shall furnish to the issuer information about the transfer of securities in the name of beneficial owners at intervals.

**Power of Board to Call for Information and Enquiry**

The Board, on being satisfied that it is necessary in the public interest or in the interest of investors so to do, may, by order in writing, call upon any issuer, depository, participant or beneficial owner to furnish in writing such information relating to the securities held in a depository as it may require; or authorize any person to make an enquiry or inspection in relation to the affairs of the issuer, beneficial owner, depository or participant, who shall submit a report of such enquiry or inspection to it within such period as may be specified in the order.

**Penalty for Delay in Dematerialization or Issue of Certificate of Securities**

If any issuer or its agent or any person, who is registered as an intermediary under the provisions of section 12 of the Securities and Exchange Board of India Act, 1992 (15 of 1992), fails to dematerialize or issue the certificate of securities on opting out of a depository by the investors, within the time specified under this Act or regulations or bye-laws made there under or abets in delaying the process of dematerialization or issue the certificate of securities on opting out of a depository of securities, such issuer or its agent or intermediary shall be liable to a penalty of one lakh rupees for each day during which such failure continues or one crore rupees, whichever is less.

**Penalty for Failure to Reconcile Records**

If a depository or participant or any issuer or its agent or any person, who is registered as an intermediary under the provisions of section 12 of the Securities and Exchange Board of India Act, 1992 (15 of 1992), fails to reconcile the records of dematerialized securities with all the securities issued by the issuer as specified in the regulations, such depository or participant or issuer or its agent or intermediary shall be liable to a penalty of one lakh rupees for each day during which such failure continues or one crore rupees, whichever is less.

## 7.6 Prevention of Money Laundering Act, 2002

The Prevention of Money Laundering Act, 2002 (PMLA) forms the core of the legal framework put in place by India to combat money laundering. PMLA and the Rules notified there under came into force with effect from July 1, 2005. Director, Financial

Intelligence Unit-India (FIU-IND) and Director (Enforcement) have been conferred with exclusive and concurrent powers under relevant sections of the Act to implement the provisions of the Act.

The PMLA and rules notified there under impose obligation on banking companies, financial institutions and intermediaries to verify identity of clients, maintain records and furnish information to FIU-IND. PMLA defines money laundering offence and provides for the freezing, seizure and confiscation of the proceeds of crime. The Act, thus enacted to prevent money laundering and to provide for confiscation of property derived from, or involved in, money- laundering and for matters connected therewith or incidental thereto.

The terms used in the Act are defined as under:

(1) "*intermediary*" means a stock - broker, sub- broker, share transfer agent, banker to an issue, trustee to a trust deed, registrar to an issue, merchant banker, underwriter, portfolio manager, investment adviser and any other intermediary associated with securities market and registered under section 12 of the Securities and Exchange Board of India Act, 1992.

(2) "*proceeds of crime*" means any property or assets of every description, whether corporeal or incorporeal, movable or immovable, tangible or intangible and includes deeds and instruments evidencing title to, or interest in, such property or assets, wherever located;

The term Money Laundering has been defined in Section 3 of the Act as Whosoever directly or indirectly attempts to indulge or knowingly assists or knowingly is a party or is actually involved in any process or activity connected with the proceeds of crime and projecting it as untainted property shall be guilty of offence of money- laundering.

**Punishment for Money- Laundering**

The punishment for money- laundering is rigorous imprisonment for a term which shall not less than three years but which may extend to seven years and shall also be liable to fine which may extend to five lakh rupees.

**Banking Companies, Financial Institutions and Intermediaries to Maintain Records**

Section 12 of the Prevention of Money Laundering Act, 2002 lays down following obligations on banking companies, financial institutions and intermediaries.

**(1) Every banking company, financial institution and intermediary shall –**

a) maintain a record of all transactions, the nature and value of which may be prescribed, whether such transactions comprise of a single transaction or a series of

transactions integrally connected to each other, and where such series of transactions take place within a month;

b) furnish information of transactions referred to in clause (a) to the Director within such time and as may be prescribed;

c) verify and maintain the records of the identity of all its clients, in such manner as may be prescribed:

Provided that where the principal officer of a banking company or financial institution or intermediary, as the case may be, has reason to believe that a single transaction or series of transactions integrally connected to each other have been valued below the prescribed value so as to defeat the provisions of this section, such officer shall furnish information in respect of such transactions to the Director within the prescribed time.

(2) The records referred to in sub- section (1) shall be maintained for a period of ten years from the date of cessation of the transactions between the clients and the banking company or financial institution or intermediary, as the case may be.

**Authorities under the Act**

The Act provides that every order of attachment of property involved in money-laundering, order of seizure of property/records etc. shall be forwarded along with a complaint or application to the Adjudicating Authority within a period of thirty days. Such order is to be confirmed by the Adjudicating Authority within a certain time - limit. The Adjudicating Authority is constituted separately. The appeal against the orders of the Director or the Adjudicating Authority can be filed before the Appellate Tribunal being set up under the Prevention of Money Laundering Act.

The following are classes of authorities for the purposes of the Act, namely:

(a) Director or Additional Director or Joint Director,
(b) Deputy Director,
(c) Assistant Director, and
(d) Such other class of officers as may be appointed for the purposes of this Act.

## 7.7 Summary

Regulatory bodies are required to regulate the stock market operations. Indian stock markets are regulated by Securities and Exchange Board of India. But other bodies like Department of Economic Affairs (DEA), Department of Company Affairs (DCA), and Reserve Bank of India (RBI) are also there for smooth functioning of the market. Some important legislation are also there to curb the irregularities in the capital market and protect the interests of the investors and paved a way for an orderly conduct of the financial markets through the free transferability of securities with speed, accuracy and transparency.

## 7.8 Self Assessment Questions

1. Discuss the SEBI regulation.
2. Explain the role of SEBI in capital market.
3. Discuss the role of the Securities Contracts (Regulation) Act, 1956.
4. Explain how, the Prevention of Money Laundering Act, 2002 help in combating money laundering in India.
5. Explain how Depository Act, 1996 helps in orderly conduct of the financial markets through the free transferability of securities with speed, accuracy and transparency.

## 7.9 Reference Books


- Pandian, Punithavathy: Security Analysis and Portfolio Management, Himalaya Publishing House Private Limited
- Singh, Rohini: Security Analysis and Portfolio Management, Excel Books
- Kevin, S.: Security Analysis and Portfolio Management, PHI Learning Private Limited
- Ranganatham, M. and Madhumati, R.: Security Analysis and Portfolio Management, Pearson India
- Securities Market Basic Module, NCFM

# Unit-8 Managing Risks

## Structure of Unit



## 8.0 Objectives

After completing this unit, you would be able to:

- Explain the concept of return and risk.
- Differentiate between different types of risk;
- Know how to measure risk.
- Realise the importance of diversification in reducing risk.

## 8.1 Introduction

The concept of risk is not a simple concept in finance. There are many different types of risk identified and some types are relatively more or relatively less important in different situations and applications. In some theoretical models of economic or financial processes, for example, some types of risks or even all risk may be entirely eliminated. For the practitioner operating in the real world, however, risk can never be entirely eliminated. It is ever-present and must be identified and dealt with. In the study of finance, there are different types of risk are been identified. It is important to remember, however, that all types of risks exhibit the same positive risk-return relationship.

## 8.2 What is Risk?

'Risk is a condition in which there exists a quantifiable dispersion in the possible outcomes from any activity. It can be classified in a number of ways.' CIMA Official Terminology, 2005.

Risk has also been defined as:

'Uncertain future events which could influence the achievement of the organization's strategic, operational and financial objectives.' International Federation of Accountants, 1999.

Thus risk implies the extent to which any chosen action or an inaction that may lead to a loss or some unwanted outcome. The notion implies that a choice may have an influence on the outcome that exists or has existed. However, in financial management, risk relates to any material loss attached to the project that may affect the productivity, tenure, legal issues, etc. of the project. In terms of investment, risk is the uncertainty of income/capital appreciation or loss of both.

Risk in holding securities is generally associated with possibility that realized returns will be less than the expected returns. In other words, risk can be defined as the probability that the expected return from the security will not materialize. Every investment involves uncertainties that make future investment returns risk-prone. Risk could be categorized depending on whether it affects the market as whole, or just a particular industry. Thus, different types of investment risk can be classified under two main groups: (a) systematic risk and (b) unsystematic risk.

## 8.3 Types of Investment Risk

### a) Systematic risk

Systematic risk refers to that portion of total variability in return caused by factors affecting the prices of all securities. It arises due to the influence of external factors on an organization. Such factors are normally uncontrollable from an organization's point of view. Economic, political, and social changes are sources of systematic risk. Thus it is a macro in nature as it affects a large number of organizations operating under a similar stream or same domain. It cannot be planned by the organization. For instance, nearly all stocks listed on the National Stock Exchange (NSE) move in the same direction as the NSE Index. On an average, 50 percent of the variation in a stock's price can be explained by variation in the market index. In other words, about half of the total risk on an average common stock is systematic risk.

For example, rupee devaluation in India in August, 2013 has affect whole stock market and some sectors like IT was left totally unaffected, similarly any change in the interest rates affect the whole market through some sectors are more affected then others. This type of risk is called non-diversifiable risk because no amount of diversification can reduce this risk.

Systematic Risk is further subdivided into:

- Market Risk (Variation in returns caused by the volatility of stock market)
- Interest Rate Risk (Variation in bond prices due to change in interest rate)
- Purchasing Power Risk (Inflation results in lowering of the purchasing power of money)

**b) Unsystematic risk**

Unsystematic or diversifiable risk is the portion of total risks that is unique to a firm or industry. Therefore it arises due to the influence of internal factors prevailing within an organization. Factors like management capability, labor unions, product category, research and development, pricing, marketing strategy, consumer preferences and raw material scarcity causes unsystematic variability of returns in a firm. Unsystematic factors are largely independent of factors affecting securities markets in general. Such factors are normally controllable from an organization's point of view. Unsystematic risk is a micro in nature as it affects only a particular organization. It can be planned, so that necessary actions can be taken by the organization to mitigate (reduce the effect of) the risk.

Unsystematic Risk is further subdivided into:

- Business Risk (Variability in Operating Income caused by Operating Conditions)
- Financial Risk (Variability in EPS due to the presence of debt in Capital Structure)
- Operational risk (Business process risks arising due to human errors)

**c) Total Risk**

Risk is the potential for variability in returns. Total variability in returns of a security represents the total risk of that security. Hence,

Total Risk = Systematic Risk + Unsystematic Risk

**Factors influencing risk:**

- The length of the maturity period affects risk. The longer maturity periods impart greater risk to investments.
- The credit-worthiness of the issuer of securities also influences the risk of the securities. The ability of the borrower to make periodical interest payments and pay back the principal amount may create risk.
- The nature of the instrument or security also determines the risk. The government securities and fixed deposits with banks tend to be least risky while corporate debt instruments like debentures tend to be riskier than government bonds whereas ownership instruments like equity shares tend to be the riskiest.

## 8.4 Classification of Systematic Risk

**a) Interest rate risk:** Interest-rate risk refers to the uncertainty of future market values and of the size of future income, caused by fluctuations in the general level of interest rates. Hence it arises due to variability in the interest rates from time to time. It particularly affects debt securities as they carry the fixed rate of interest. The interest-rate risk is further classified as price risk and reinvestment rate risk. The meaning of various types of interest-rate risk is discussed below:

(i) **Price risk** arises due to the possibility that the price of the shares, commodity, investment, etc. may decline or fall in the future.

(ii) **Reinvestment rate risk** results from fact that the interest or dividend earned from an investment can't be reinvested with the same rate of return as it was acquiring earlier.

**b) Market risk:** Market risk is associated with consistent fluctuations seen in the trading price of any particular shares or securities. That is, it is a risk that arises due to rise or fall in the trading price of listed shares or securities in the stock market. The stock prices may fall from time to time while a company's earnings are rising, and vice versa, is not uncommon. The price of a stock may fluctuate widely within a short span of time even though earnings remain unchanged. The causes of this occurrence are varied, but it is mainly due to a change in investors' attitudes toward shares in general, or toward certain types or groups of securities in particular. Variability in return on most common stocks that is due to basic wide changes in investor expectations is referred to as market risk. The market risk is further classified as absolute risk, relative risk, directional risk, non-directional risk, basis risk and volatility risk. The meaning of different types of market risk is briefly discussed below:

(i) **Absolute risk** is the risk without any content. For e.g., if a coin is tossed, there is fifty percentage chance of getting a head and vice-versa.

(ii) **Relative risk** is the assessment or evaluation of risk at different levels of business functions. For e.g. a relative risk from a foreign exchange fluctuation may be higher if the maximum sales accounted by an organization are of export sales.

(iii) **Directional risks** are those risks where the loss arises from an exposure to the particular assets of a market. For e.g. an investor holding some shares experience a loss when the market price of those shares falls down.

(iv) **Non-Directional risk** arises where the method of trading is not consistently followed by the trader. For e.g. the dealer will buy and sell the share simultaneously to mitigate the risk.

(v) **Basis risk** is due to the possibility of loss arising from imperfectly matched risks. For e.g. the risks which are in offsetting positions in two related but non-identical markets.

(vi) **Volatility risk** is the risk of a change in the price of securities as a result of changes in the volatility of a risk factor. For e.g. volatility risk applies to the portfolios of derivative instruments, where the volatility of its underlying is a major influence of prices.

**c) Purchasing power or inflationary risk:** Market risk and interest-rate risk can be defined in terms of uncertainties as to the amount of current rupees to be received by an investor. Purchasing-power risk is the uncertainty of the purchasing power of the amounts to be received. In general terms, purchasing-power risk refers to the impact of inflation or deflation on an investment. Therefore it is also known as inflation risk. It is so, since it derive from the fact that it affects a purchasing power adversely. It is not desirable to invest in securities during an inflationary period. Rational investors should include in their estimate of expected return an allowance for purchasing-power risk, in the form of an expected annual percentage change in prices. The purchasing power or inflationary risk is classified as demand inflation risk and cost inflation risk. The types of purchasing power or inflationary risk are discussed below.

(i) **Demand inflation risk** arises due to increase in price, which result from an excess of demand over supply. It occurs when supply fails to cope with the demand and hence cannot expand anymore. In other words, demand inflation occurs when production factors are under maximum utilization.

(ii) **Cost inflation risk** arises due to sustained increase in the prices of goods and services. It is actually caused by higher production cost. A high cost of production inflates the final price of finished goods consumed by people.

## 8.5 Classification of Unsystematic Risk

**i) Business risk:** Business risk arises due to the operating conditions faced by a firm and the variability these conditions instill into operating income and expected income. The degree of variation from the expected trend would measure business risk. Business risk can be divided into two broad categories: external and internal.

**(i)** **Internal business risk** is largely associated with the efficiency with which a firm conducts its operations within the broader operating environment imposed upon it. Each firm has its own set of internal risks, and the degree to which it is successful in coping with them is reflected in operating efficiently.

**(ii)** **External business risk** is the result of operating conditions imposes upon the firm by circumstances beyond its control. Each firm also faces its own set of external

risks, depending upon the specific operating environmental factors with which it must deal. The external factors, from cost of money to defence-budget cuts to higher tariffs to a down swing in the business cycle, are some of the external factors.

**ii) Financial or credit risk:** Financial risk is also known as credit risk. This risk arises due to change in the capital structure of the organization. The capital structure mainly comprises of three ways by which funds are sourced for the projects and they are owned funds (share capital), borrowed funds (loan funds, debentures) and retained earnings (reserve and surplus). The financial or credit risk is further classified into following types.

(i) **Exchange rate risk** is also called as exposure rate risk. It is a form of financial risk that arises from a potential change seen in the exchange rate of one country's currency in relation to another country's currency and vice-versa. For e.g. investors or businesses face an exchange rate risk either when they have assets or operations across national borders, or if they have loans or borrowings in a foreign currency.

(ii) **Recovery rate risk** is an often neglected aspect of a credit risk analysis. The recovery rate is normally needed to be evaluated. For e.g. the expected recovery rate of the funds tendered (given) as a loan to the customers by banks, non-banking financial companies (NBFC), etc.

(iii) **Sovereign risk** is the risk associated with the government. In such a risk, government is unable to meet its loan obligations, reneging (to break a promise) on loans it guarantees, etc.

(iv) **Settlement risk** is the risk when counterparty does not deliver a security or its value in cash as per the agreement of trade or business.

**iii) Operational risk**

Operational risks are the business process risks failing due to human errors. This risk will change from industry to industry. It occurs due to breakdowns in the internal procedures, people, policies and systems. The operational risk is further classified as model risk, people risk, legal risk and political risk. The types of operational risk are depicted and explained below:

(i) **Model risk** is the risk involved in using various models to value financial securities. It is due to probability of loss resulting from the weaknesses in the financial model used in assessing and managing a risk.

(ii) **People risk** arises when people do not follow the organization’s procedures, practices and/or rules. That is, they deviate from their expected behaviour.

(iii) **Legal risk** arises when parties are not lawfully competent to enter an agreement among themselves. Furthermore, this relates to regulatory risk, where a transaction

could conflict with a government policy or particular legislation (law) might be amended in the future with retrospective effect.

(iv) **Political risk** is the risk that occurs due to changes in government policies. Such changes may have an unfavourable impact on an investor. This risk is especially prevalent in the third-world countries.

## Activity A :

1. Identify the type of risk:

| Risk | Type of Risk |
|---|---|
| Risk of inflation | |
| Risk of a CEO resigning | |
| Risk of a takeover | |
| Risk of a labor strike | |

## 8.6 Measurement of Risk

It is common that an investor would try to predict the kind of risk that he is likely to face and would also try to estimate the extent of risk associated with different investment proposals. In other words, an investor would attempt to measure or quantify the risk of each investment under his consideration before making the final selection. Thus measurement of risk is necessary for analysis of any investment.

Risk is always attached with return so it cannot be measured without reference to return. On the other hand, return depends on the cash inflows to be received from the investment. Let us take an example of purchase of a share. While investing in shares, an investor expects to receive future dividends declared by the company. In addition, he expects to receive capital gain in the form of difference between the selling price and purchase price, when the share is finally sold. Suppose a share of ABC Ltd. is currently selling at Rs 100.00. An investor who is interested in the share anticipates that the company will pay a dividend of Rs 5 in the next year. Moreover, he expects to sell the share at Rs 150 after one year. The expected return from the investment in share will be as follows:

$$R = \frac{\text{Forecasted dividend + Forecasted end of the period stock price}}{\text{Initial investment}} - 1$$

$$R = \frac{5 + 150}{100.00} - 1$$

= 0.55 or 55 per cent

It is essential to note that in this case investor expects to get a return of 55 per cent in future, which is uncertain. In future, it might be possible that the dividend declared by the company may turn out to be either more or less than the figure anticipated by the investor. Similarly, the selling price of the share may be less than the price expected by the investor at the time of investment. It may sometimes be even more. Hence, there is a possibility that the future return may be more than 55 per cent or less than 55 per cent. In view of the fact that the future is uncertain the investor has to consider the probability of several other possible returns. The expected returns may be 20 per cent, 30 per cent, 50 per cent, 60 per cent or 70 per cent. The investor now has to assign the probability of occurrence of these possible alternative returns as given below:

| **Possible returns (in per cent) $R_i$** | **Probability of occurrence $p_i$** |
|---|---|
| 10 | 0.20 |
| 20 | 0.30 |
| 30 | 0.30 |
| 40 | 0.10 |
| 50 | 0.10 |

The table above gives the probability distribution of possible returns from an investment in shares. Such distribution can be developed by the investor with the help of investigation of past data and modifying it aptly for the changes he expects to occur in a future period of time. With the help of available probability distribution two statistical measures one expected return and the other risk of the investment can be calculated.

## I. Expected Return

The expected return of the investment is the probability weighted average of all the possible returns. If the possible returns are denoted by $R_i$ and the related probabilities are $p_i$ the expected return may be represented as E(R) and can be calculated as:

$$E[R] = \sum_{i=1}^{N} p_i R_i$$

Here,
E[R] = the expected return on the stock,
N = the number of states,
$p_i$ = the probability of state i, and
$R_i$ = the return on the stock in state i.

It is the sum of the products of possible returns with their respective probabilities. The expected return of the share in the example given above can be calculated as shown below:

**Calculation of Expected Return:**

| **Possible returns $R_i$** | **Probability $P_i$** | **$R_i$ x $P_i$** |
|---|---|---|
| 10 | 0.20 | 2 |
| 20 | 0.30 | 6 |
| 30 | 0.30 | 9 |
| 40 | 0.10 | 4 |
| 50 | 0.10 | 5 |
| | $E[R] = \sum_{i=1}^{N} p_i R_i$ | 26 |

Hence the expected return is 26 per cent.

## II. Variance and Standard Deviation

Calculation of expected return is not sufficient for decision making as risk is attached with every return. Therefore risk aspect should also be considered along with the expected return. The most popular measure of risk is the variance or standard deviation of the probability distribution of possible returns.

Variance ($\sigma^2$) is a measure of the dispersion of a set of data points around their mean value. In other words, variance is a mathematical expectation of the average squared deviations from the mean. It is computed by finding the probability-weighted average of squared deviations from the expected value. Variance measures the variability from an average (volatility). Volatility is a measure of risk, so this statistic can help determine the risk an investor might take on when purchasing a specific security. Variance is generally denoted by $\sigma^2$ and is calculated by using the following formula:

$$Var(R) = \sigma^2 = \sum_{i=1}^{N} p_i (R_i - E[R])^2$$

Where,

N = the number of states,

$p_i$ = the probability of state i,

$R_i$ = the return on the stock in state i, and

E[R] = the expected return on the stock.

The standard deviation is calculated as the positive square root of the variance.

$$SD(R) = \sigma = \sqrt{\sigma^2} = (\sigma^2)^{\frac{1}{2}}$$

Illustration: Calculate Expected Return, Variance, and Standard deviation:

| State | Probability | Return on Stock A | Return on Stock B |
|---|---|---|---|
| 1 | 20% | 5% | 50% |
| 2 | 30% | 10% | 30% |
| 3 | 30% | 15% | 10% |
| 4 | 20% | 20% | -10% |

**Stock A**

$E[R_A]= 0.20(5\%)+0.30(10\%)+0.30(15\%)+0.25(20\%)= 12.5\%$

Variance $(\sigma^2_A) = 0.20(0.05 - 0.125)^2+0.30(0.10 - 0.125)^2+0.30(0.15 - 0.125)^2+0.20(0.20-0.125)^2 =0.00263$

SD $(\sigma_A) = 5.12\%$

**Stock B**

$E[R_B]=0.20(50\%)+0.30(30\%)+0.30(10\%)+0.25(-10\%)= 20\%$

Variance $(\sigma^2_B) = 0.20(0.05 - 0.20)^2+0.30(0.30 - 0.20)^2+0.30(0.10 - 0.20)^2+0.20(-0.10 - 0.20)^2 =.042$

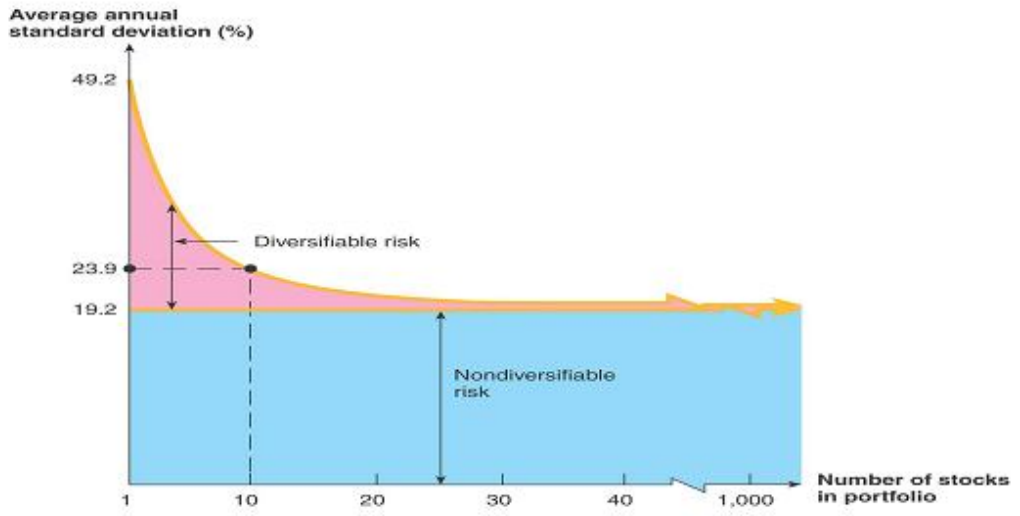
SD $(\sigma_B) = 20.49\%$

The rationale behind calculation of variance and standard deviation is to measure the extent of variability of possible returns from the expected return. There are several other measures also but standard deviation has been the most popularly accepted measure. This method is commonly used for assessing risk and is also known as the mean variance approach.

The standard deviation or variance provides a measure of the total risk associated with a security. The total risk comprises two components, namely systematic risk and unsystematic risk. Unsystematic risk is the risk specific or unique to a company. Unsystematic risk associated with the security can be eliminated or reduced by diversification. This collection of diverse securities is called a portfolio. With diversification the investment is spread over a group of securities with different characteristics. The principle of diversification is as follows:

- Diversification can substantially reduce the variability of returns without an equivalent reduction in expected returns;

- This reduction in risk arises because worse-than-expected returns from one asset are offset by better-than-expected returns from another asset;
- However, there is a minimum level of risk that cannot be diversified away -that is the systematic portion.




The above diagram depicts how the risk can be reduced with the increase in the number of securities. It should be noted that by combining many securities in a portfolio the unsystematic risk can be avoided or cancelled out which is attached to any particular security. However, ultimately when the size of the portfolio reaches certain limit, it will contain only the systematic risk of securities included in the portfolio. As unsystematic risk can be eliminated or reduced through diversification, it is not relevant for an investor. The risk that is relevant in investment decisions is the systematic risk because it is not diversifiable. Hence, the main interest of the investor lies in the measurement of systematic risk of a security.

## Activity B :

2. Calculate the expected return, variance, and standard deviation of returns for a stock having the following probability distribution:

| State | Probability | Return on Stock A | Return on Stock B |
|---|---|---|---|
| 1 | 10% | -15% | -10% |
| 2 | 40% | 10% | 30% |
| 3 | 30% | 35% | 10% |
| 4 | 20% | 20% | 40% |

## Measurement of Systematic Risk

Systematic risk is the risk inherent to the entire market or entire market segment. It is also known as "undiversifiable risk" or "market risk." Thus it is the variability in security returns caused by changes in the economy or the market and all securities are affected by such changes to some extent. Some securities show greater variability in response to market changes and some may exhibit less response. Securities that are more sensitive to changes in factors are said to have higher systematic risk. The average effect of a change in the economy can be represented by the change in the stock market index. The systematic risk of a security can be measured by relating that security's variability in respect of variability in the stock market index.

The systematic risk of a security is measured by Beta. This measure quantifies a stock's risk in relation to the market. It is a measure of the extent to which the returns on a given stock move with the stock market. The tendency of a stock to move with the market is reflected in its beta coefficient (β), which is a measure of the stock's volatility relative to that of the overall market. The main input data required for the calculation of beta of any security are the historical data of returns of the individual security and corresponding return of a representative market return (stock market index). The market has a beta of 1.0. Hence, a stock with a beta greater than 1.0 will have a greater volatility than the overall market, and vice versa. There are two statistical methods i.e. correlation method and the regression method, which can be used for the calculation of Beta.

### i) Correlation Method

By means of this method, beta (β) can be calculated from the historical data of returns by the following formula:

$$\text{Beta } (\beta) = \frac{r_{im}\,\sigma_i\,\sigma_m}{\sigma^2_m}$$

Where,

$r_{im}$ = Correlation coefficient between the returns of the stock i and the returns of the market index.

$\sigma_i$= standard deviation of returns of stock

$\sigma_{im}$= Standard deviation of returns of the market index.

$\sigma^2_m$ = Variance of the market returns

### ii) Regression Method

The regression model is based on the notion that there exists a linear relationship between a dependent variable and an independent variable. The model helps to calculate

the values of two constants, namely alpha (α) and beta (β). β measures the change in the dependent variable in response to unit change in the independent variable, while α measures the value of the dependent variable even when the independent variable has zero value. The formula of the regression equation is as follows:

$Y = \alpha + \beta X$

Y= Dependent variable

X= Independent variable

α and β are contants

The formula used for the calculation of α and β are given below:

$\alpha = x - \beta y$

$$\beta = \frac{n\sum XY - (\sum X)(\sum Y)}{n\sum X^2 - ((\sum X)^2}$$

Where,

n = Number of items.

x = Mean value of the dependent variable scores.

y =Mean value of independent variable scores.

Y = Dependent variable scores.

X = Independent variable scores.

For calculation of β, the return of the individual security is taken as the dependent variable and the return of the market index is taken as the independent variable. The regression equation is represented as follows:

$$R_i = \alpha + \beta_i R_m$$

Where,

$R_i$= Return of the individual security.

$R_m$= Retum of the market index.

α= Estimated return of the security when the market is stationary.

$\beta_i$ = Change in the return of the individual security in response to unit change in the return of the market index. It is, thus, the measure of systematic risk of a security.

**Interpretation of Beta is as follows:**

- ***Positive Beta***- indicates that security's return is dependent on the market return and moves in the direction in which market moves.
- ***Negative beta*** - A beta less than 0 - which would indicate an inverse relation to the market. It is possible but highly unlikely. Some investors used to believe that gold and gold stocks should have negative betas because they tended to do better when the stock market declined, but this hasn't proved to be true over the long term.

- ***Zero Beta*** - Basically indicates that security's return is independent of the market return.
- ***Beta between 0 and 1*** - Companies with volatilities lower than the market have a beta of less than 1 (but more than 0). Many utilities fall in this range.
- ***Beta greater than 1*** - This denotes a volatility that is greater than the broad-based index. Many technology companies have a beta higher than 1.

## Activity C :

3. Calculate the expected return, variance, and standard deviation of returns for a stock having the following probability distribution:

| State | Probability | Return on Stock ABC | Return on Stock BXY |
|---|---|---|---|
| 1 | 20% | 15% | 30% |
| 2 | 40% | -10% | 40% |
| 3 | 10% | 25% | 20% |
| 4 | 30% | 20% | 20% |

## 8.7 Summary

Investors purchase financial assets such as shares because they desire to increase their wealth, *i.e.*, earn a positive rate of return on their investments. The future, however, is uncertain; investors do not know what rate of return their investments will realize. In finance, we assume that individuals base their decisions on what they expect to happen and their assessment of how likely it is that what actually occurs will be close to what they expected to happen. When evaluating potential investments in financial assets, these two dimensions of the decision making process are called expected return and risk. Risk reflects the chance that the actual return on an investment may be very different than the expected return. An asset's total risk consists of both systematic and unsystematic risk. Systematic risk, which is also called market risk or undiversifiable risk, is the portion of an asset's risk that cannot be eliminated via diversification. The systematic risk indicates how including a particular asset in a diversified portfolio will contribute to the riskiness of the portfolio. Unsystematic risk, which is also called firm-specific or diversifiable risk, is the portion of an asset's total risk that can be eliminated by including the security as part of a diversifiable portfolio. One way to measure risk is to calculate the variance and standard deviation of the distribution of returns. The method of used for evaluating systematic risk is Beta.

## 8.8 Self Assessment Questions

1. Which one of the following is an example of diversifiable risk?

   a) the price of electricity just increased
   b) the employees of Textile, Inc. just voted to go on strike
   c) the government just imposed new safety standards for all employees
   d) the government just lowered corporate income tax rates
   e) the cost of group health insurance just increased nationwide

2. Which of the following are examples of undiversifiable risks?

   a) the inflation rate spikes nationwide
   b) an unexpected terrorist event occurs
   c) the price of lumber suddenly spikes
   d) taxes are increased on hotels

3. What is risk? How it is measured?
4. What are the different types of risk? Explain how they are diversified.
5. What is Beta? How it is interpreted?
6. Write short note on:

   a) Business risk
   b) Market risk
   c) Operational risk
   d) Purchasing power risk

## 8.9 Reference Books


- Pandian, Punithavathy: Security Analysis and Portfolio Management, Himalaya Publishing House Private Limited
- Singh, Rohini: Security Analysis and Portfolio Management, Excel Books
- Kevin, S.: Security Analysis and Portfolio Management, PHI Learning Private Limited
- Ranganatham, M. and Madhumati, R.: Security Analysis and Portfolio Management, Pearson India
- Fischer Donald E, & Jordan Ronald J: Security Analysis and Portfolio Management, Prentice-Hall
- Securities Market Basic Module, NCFM

# Unit – 9 : Economic and Industry Analysis

## Structure of Unit



## 9.0 Objectives

After completing this chapter, you would will be able to understand :

- Concept of Fundamental Analysis
- Techniques of performing Fundamental Analysis
- Various economic indicators and tools of economic analysis
- Economic Forecasting and its techniques
- The concept of Industry Analysis and Industry life cycle
- Key Indicators of Industry Analysis

## 9.1 Introduction

Fundamental analysis is a stock valuation methodology that uses financial and economic analysis to envisage the movement of stock prices. The fundamental data that is analysed could include a company's financial reports and non-financial information such as estimates of its growth, demand for products sold by the company, industry comparisons, economy-wide changes, changes in government policies etc. Fundamental analysis is based on the premise that a security has an intrinsic value at any given time. According to fundamental analysts the intrinsic value and market value can vary from time to time. A share that is quoting below the intrinsic / fundamental value should be bought, while a share that is priced above the intrinsic value should be sold. The

fundamental analysts attempt to find out such under or overpriced shares for their investment decisions. They believe that though in the short run, market price may differ from the intrinsic value, but eventually the investors will recognize the discrepancy and act to bring the two values together.

## 9.2 What is Fundamental Analysis?

Fundamental analysis is the approach to determine, "What ought to be the price". It is the examination of the underlying forces that affect the well being of the economy, industry groups, and companies. As with most analysis, the goal is to derive a forecast and profit from future price movements. At the company level, fundamental analysis may involve examination of financial data, management, business concept and competition. At the industry level, there might be an examination of supply and demand forces for the products offered. For the national economy, fundamental analysis might focus on economic data to assess the present and future growth of the economy. To forecast future stock prices, fundamental analysis combines economic, industry, and company analysis to derive a stock's current fair value and forecast future value. If fair value is not equal to the current stock price, fundamental analysts believe that the stock is either over or under valued and the market price will ultimately gravitate towards fair value. Fundamentalists do not heed the advice of the random walkers and believe that markets are weak-form efficient. By believing that prices do not accurately reflect all available information, fundamental analysts look to capitalize on perceived price discrepancies. Fundamental analysis is a method used to determine the value of a stock by analyzing the financial data that is 'fundamental' to the company. That means that fundamental analysis takes into consideration only those variables that are directly related to the company itself, such as its earnings, its dividends, and its sales. Fundamental analysis does not look at the overall state of the market nor does it include behavioral variables in its methodology. It focuses exclusively on the company's business in order to determine whether or not the stock should be bought or sold.

### 9.2.1 Two Approaches of Fundamental Analysis

While carrying out fundamental analysis, investors can use either of the following approaches:

a) **Top-down approach:** In this approach, an analyst investigates both international and national economic indicators, such as GDP growth rates, energy prices, inflation and interest rates. The search for the best security then trickles down to the analysis of total sales, price levels and foreign competition in a sector in order to identify the best business in the sector.

b) **Bottom-up approach**: In this approach, an analyst starts the search with specific businesses, irrespective of their industry/region.

## 9.3 How does Fundamental analysis works?

Fundamental analysis is based on the premise that every share has a certain intrinsic value at a period of time. This intrinsic value changes from time to time as a consequence of both internal and external factors. The theory of fundamental analysis submits that one should purchase a share when it is available below its intrinsic value and sell it when it rises above its intrinsic value. When the market value of share is below its intrinsic value it is undervalued, whereas if the market value of a share is above its intrinsic value it is overvalued. Fundamentalists thus seek to purchase underpriced shares and sell overpriced ones. They believe that although the market price may deviate from the intrinsic value in the short term, in the long term the market price will be equal to the intrinsic value.

Fundamental analysts often use the efficient market theory in determining the intrinsic price of a share. This theory submits that in an efficient market all investors receive information instantly and that it is understood and analyzed by all the market players and is immediately reflected in the market prices. The market price, therefore, at every point in time represents the latest position at all times. The efficient market theory submits it is not possible to make profits looking at old data or by studying the patterns of previous price changes. It assumes that all foreseeable events have already been built into the current market price.

Fundamental Analysis thus provides an analytical framework for investment decision-making. This analytical framework is known as E-I-C framework (Economy – Industry Company analysis). The fundamental approach calls up on the investor to make his buy or sell decision on the basis of a detailed analysis of the information about the company, industry to which the company belongs, and economy. This results in informed in-vesting. For this the fundamental Analysis makes use of EIC framework of analysis. Fundamental Analysis involves three steps:

1. Economy Analysis
2. Industry Analysis
3. Company Analysis.

### Activity A :

1. Discuss the relationship between intrinsic value of a share and the earnings capacity of the company.

## 9.4 Economic Analysis

Investors are concerned with those factors in the economy which affect the performance of the companies in which they want to invest. Economic analysis helps in assessing the future corporate earnings and the payment of dividends and interest to investors.

**9.4.1 Economic forecasting**:

An understanding of economic forces that affect stock prices facilitates forecasting likely changes in the market by using data on the economic variables. The performance of the industries and specific companies depends upon how will the economy performs in the future, both long term as well as short term. Long term forecasts are usually made for a period generally refers to a period from one to three years. Intermediate period refers to a period of three to five years.

**9.4.2 Economic Forecasting techniques**: - There are basically four economic forecasting techniques:-

a) Economic Indicators
b) Diffusion Indexes
c) Econometric model building
d) GNP model building

**a) Economic Indicators**

An economic indicator ia a statistic about an economic activity. Economic indicators allow analysis of economic performance and predictions of future performance. These indicators act like a barometer. One application of economic indicators is the study of business cycles. It helps in getting boom and recessions. Economic indicators can be classified into three categories : leading indicators, laggnig indicators, and coincidental indicators.

**i) Leading Indicators**

Leading indicators are indicators that usually cahnge before the economy as a whole changes. The lead indicator approach attempts to forecast the general economic conditions by identifying economic indicators that turn ahead of the change in general level of economic activity. They are therefore useful as short term predictors of the economy. Stock market returns are a leading indicator : the stock market usually begins to decline befor the economy as a whole declines and usually begins to increase before the general economy begins to recover from a recession. Since these satatistics precede ( one to twelvw months ) other changes in the economic activity, they are used to forecast the forthcoming pattern of the overall economy. Major leading indicators include, orders of durable goods, orders for plant and equipment, change in raw material prices, corporate profits and share prices, new housing starts, business formation and failures and money supply (M2).

**ii) Lagging Indicators**

A lagging indicator is one that follows an evet. These indicators tends to change only after an economy has already changed, or has begun to follow a particular pattern or trend. They trail behind ( usually 3 to 6 months ) the overall economic cycle. Major lagging indicators include the average duration of unemployment, outstanding consumer and business loans, business spending, consumer price index, unit labour costs, book value of business inventories etc.

**iii) Coincidental Indicators**

These indicators occur at approximately the same time as the conditions they signify. These indicators change almost at the same time as the whole economy, thereby providing information about the current state of the economy. Major coincidental indicators include, manufacturing and trade sales, nonfarm payroll employment, index of industrial production, manufacturing and trade sale etc.

**b) Diffusion Index**

The diffusion index is a method which combines the different indicators into one total measure and it gives the weaknesses and strengths of a particular time series of dta. It is a measure of how widespread a phenomenon is. It is a measure of the percentage of say, leading indicators that have advanced / increased or are showing a positive momentum over a definite period. It breaks down the indexes and analyses the components separately, exhibiting the degree to which they are moving in agreement with the dominant direction of the index. If four out of , say ten leading indicators rise during a particular quarter, the diffusion index for that quarter will be 40 percent. If in the next quarter, six seven rises ( may not include all the four rise in the last quarter ), the index for that quarter will be 70 percent. The diffusion index of the current quarter is to be compared with the past quarter interpretation and a rise of 40 percent to 70 percent in the index is a stronger confirmation of a period of economic advance.

**c) Econometric model building**

Econometrics is the application of mathematical methods to economic data to forecast the future trend of the economy. This technique is used to draw out relationship between two or more variable. This is an approach to determine the precise relationship between the dependent and the independent variables to forecast a direction as well as magnitude. Econometric models can be used effectively for future projections if and only if estimated coefficients are found to be acceptable in respect of their stability over time.

**d) GNP model building**

This is also called sect oral analysis or opportunistic model building. This approach forecast GNP in the short run by using the national accounting data. The method is use to find out the total income and total demand for the forecast period. It takes into consideration the political stability, economic and fiscal policies of the government and also emphasizes on taxation policies and interest and inflation rates.

Companies are part of the industrial and business sector, which in turn is a part of the overall economy. Thus the performance of a company depends on the performance of the economy in the first place. In the Indian economy, the matters to be considered are :

i) The behaviour of the monsoon and the performance of the agriculture. Good monsoon, income increases, demand for the industrial products increases and service and manufacturing sector proper's.
ii) A study of economic trends as indicated by the rate of growth in gross national product, employment, aggregate corporate profits, personal disposable income, balance of payment position, inflation, government spending, money supply etc.
iii) A study of economic policies of the government including plan priorities, monetary policies, EXIM policy, fiscal policy, industrial policy, regulation and control of price, wages and production.
iv) The general business conditions in the form of business cycles or level of business activity and the performance of industry. Performance of agriculture, availability of power and other infrastructural outputs and imported inputs and a host of other factors influencing the demand, cost and profit margins of companies.
v) The economic and political stability in the form of stable and long term economic policies and a stable political system with no uncertainty would also be necessary for a good performance of the economy in general and of companies in particular.

All the above factors of the economy influence the corporate performance and the industry in general. In any investment analysis a broad picture of these factors and a forecast of the growth of the economy and of industry would be necessary to decide when to invest and what to invest in.

In general the analysis of the following factors indicates the trends in economic changes that effect the risk and return on investments.

- Monetary Policy
- Industrial production
- Capacity utilisation
- Unemployment
- Inflation

- GDP growth rate
- Financial Institutions (FI's) lending
- Stock prices
- Monsoons
- Productivity of factors of production
- Fiscal deficit
- Stock of food grains and essential commodities
- Industrial policy
- Foreign trade and balance of payment position
- Political and economical stability
- Innovation in Technology
- Infrastructural facilities
- Economic planning
- EXIM policy
- Interest rates
- Foreign investments
- Capital market trends
- Business cycle
- Foreign exchange reserves, etc.

When an investor has a made an analysis of the domestic economic factors on the basis of the leading, lagging and coincidental indicators including the industrial, EXIM, fiscal, monetary policies together with the above mentioned factors such as demographic factors etc. to find out the direction of trend, the next step in fundamental analysis is to analyse the industry / sector in which to invest.

**Activity B :**

1. " Knowing, analysing and understanding the current state of affairs in the economy is useful and essential for analysing the investment in the securities." In the light of this statement , explain the relevance of economic analysis.

## 9.4.1 Industry Analysis

After conducting an analysis of the economy and identifying the direction of the economy in terms of various industries, the next step in the fundamental analysis is industry analysis. An investor ultimately invests his money in the securities of one or more specific companies. Each company can be characterized as belonging to an industry. The performance of the companies would therefore, be influenced by the fortunes of the industry to which it belongs. For this reason an analyst has to under-take

an industry analysis so as to study the fundamental factors affecting the performance of different industries. At any stage of economy, there are some industries, which are fast growing and others are stagnating or declining. If an industry is growing the companies within the industries may also be prosperous. The performance of the companies will depend, among other things, upon the state of industry to which they belong. Industry analysis refers to the evaluation of the relative strength and weakness of particular industries.

There are many bases on which grouping of companies can be done. Traditional classification is generally done product – wise like steel, IT, pharmaceuticals, textile, FMCG etc. Such a classification, though useful, does not help much in investment decision – making. Classification of industries from investment decision making point of view are as follows :

**a) Growth Industry**

A sector of the economy experiencing a higher-than-average growth rate. This is an industry that is expected to grow consistently and its growth may exceed the average growth of the economy. Growth industries are often associated with new or pioneer industries that did not exist in the past and their growth is related to consumer demand for the new products or services offered by the firms within the industry. For eg., telecom, infrastructure, capital goods etc.

**b) Cyclical Industry**

An industry which is sensitiv to business cycles and whose performance is tied to the overall economy, specially interest rates. Many cyclical industries produce durable commodity- like goods such as raw materials, cars, chemicals, construction, paper, steel, and heavy equipment. Given the durable nature of the goods, such purchases often get postponed in poor economic conditions, but sell especially well in good economic conditions.

**c) Defensive Industry**

A industry whose sales and earnings remain relatively stable during both economic upturns and downturns. Defensive industries may lag behind other industries during periods of economic expansion due to the relative stability of the demand for its products and services. While the demand for some goods and services tends to decrease dramatically during periods of economic instability or turmoil, the demand for the goods and services provided by defensive industries tends to remain stable. Companies in the food, utilities, healthcare and non-durable goods (soap, toothpaste) industries tend to perform more evenly through good and bad economic times.

### 9.5.1 Industry Life Cycle

Another creteria to classify industries is the various stages of development. Industries evolve through four stages - the pioneering stage, the expansion stage, the stabilisation stage and the decay stage.

**a) Pioneering stage**

The early stages of an industry are often characterized by a new technology or product. In this beginning phase the product or industry starts with sales of zero and operates at a loss as initial sales obtained. Thereafter its demand not only grows but grows at an increasing rate. A great opportunity exists for profits and a large number of firms attempt to capture their share of the market, there arises a higher business mortality rate; many of the weaker firms attempting to survive in this new industry are eliminated, and a lesser number of firms survive this phase. A security analyst will have a difficult task at this stage selecting those firms that will on top for some time to come. Even if the analyst can recognize an emerging industry in the pioneering stage, he will probably not invest at this point in the industry's development because of the great risks involved and because of the tremendous difficulty in selecting the survivors.

**b) Expansion Stage**

The expansion stage is characterized by the appearance of the firms surviving from the pioneering stage. Sales of these companies grow rapidly and consistent annual profits usually begin to emerge during this stage. Their competition in the expansion stage brings about improved products at a lower price. These firms continue to expand but at a moderate rate of growth than that experienced in the pioneering stage. These now stronger, steadier, more efficient firms become more attractive for investment purposes. However these firms reinvest much of their earnings paying small rate of dividend and also borrow heavily in order to finance its additional capital investments needed to sustain this period of rapid growth. Solvency is difficult to maintain as a firm expands rapidly

**c) Stagnation Stage**

Following years of rapid growth during which the firms in an industry tend to acquire stable market shares, come years of slower growth which comprise the third stage. Mature growth companies may be large corporations, they may begin to pay consistent cash dividends and they repay any excessive debt they acquired during their period of rapid expansion. At this point the product has reached its full potential for use by consumers and profit margins become narrower. Firms at his stage sometimes are categorized as cash cows, having reasonably stable cash flow but offering little opportunity for profitable expansion. The cash cow is best 'milked from' rather than reinvested in the company.

**d) Decay Stage**

In this stage, the industry might grow at less than the rate of the overall economy, or even it might even shrink. This could be due to obsolescence of the product, competition from new products, or competitions from new low cost suppliers. Customers have changed their habits, style and preference. So the industry becomes obsolete and gradually ceases to exist. The changes in the technology and declining in the demand are the major causes for the decay of an industry. The investors should disinvest when signals of decline are evident. The life cycle theory is better for explaining the behavior of industries than it is for explaining the behavior of individual firms because many firms fall in to bankruptcy during stages one and two. Even in those cases it is applicable, the life cycle approach can be difficult to interpret because there are no set time dimensions on a product's life. The experience of most industries suggest that they go through the four phases of the industry life cycle, though there are considerable variations in terms of the relative duration of various stages and the rates of growth during these stages. Because of these variations, it may not be easy to define what the current stage is, how long it will last, and what would be its precise growth rate.

### 9.5.2 Key Indicators of Industry Analysis

- Past Sales
- Past earnings
- Attitude of government
- Labour conditions
- Competitive conditions
- Technological progress
- Industry share prices
- Price earning multiples
- Strengths and weaknesses
- Opportunities and threats
- Product line
- Raw material and inputs
- Capacity installed and utilised
- Economies of scale
- Capital requirements
- Distribution channels
- Product differentiation
- Threat of entry

### 9.5.3 SWOT Analysis

To select a industry among different industries, an evaluation is done on the basis of strength weakness analysis in the major functional areas, like marketing, finance, human resources and production.

| S.No. | Areas | Performance | | | Importance | |
|---|---|---|---|---|---|---|
| | | Good | Avg. | Bad | High | Low |
| | **Marketing** | | | | | |
| 1 | Popularityand regard | | | | | |
| 2 | Market share | | | | | |
| 3 | Quality image | | | | | |
| 4 | Service reputation | | | | | |
| 5 | Distribution costs | | | | | |
| 6 | Sales force | | | | | |
| 7 | Market forces | | | | | |
| | **Finance** | | | | | |
| 1 | Cost of capital | | | | | |
| 2 | Funds availabilty | | | | | |
| 3 | Profitability | | | | | |
| 4 | Financial stability | | | | | |
| | **Production** | | | | | |
| | Facilities | | | | | |
| 1 | Economies of scale | | | | | |
| 2 | Capacity utilization | | | | | |
| 3 | Labour productivity | | | | | |
| 4 | Manufacturing costs | | | | | |
| 5 | Raw material availability | | | | | |
| 6 | Technology progress | | | | | |
| 7 | **Human Resources** | | | | | |
| | Leadership | | | | | |
| 1 | Management capabilities | | | | | |
| 2 | Workers attitude | | | | | |
| 3 | Entrepreneurial competence | | | | | |
| 4 | Skill development | | | | | |
| 5 | Industrial relations | | | | | |
| 6 | | | | | | |

## Activity C :

1. “Industry life cycle exhibits the position of the industry and gives clue to entry and exit for investors.” Explain
2. Why does portfolio manager do the industry analysis?

### 9.5.4 Porter's Five Forces – A Model for Industry Analysis

Michael Porter, provided a framework for analyzing the competitive conditions prevailing in an industry and its relation with the industry's profitability. In his model, Porter has identified five competitive forces those altogether can drive competition or determine the profit potential or strength of an industry. The forces identified by Porter in his study include-

a) Threat of new entrants
b) Rivalry among the existing firms
c) Pressure from the substitute products
d) Bargaining power of buyers
e) Bargaining power of sellers

#### a) Threat of New Entrants

New entrants to an industry put pressure on price and profits. Even if a firm has not entered an industry, the potential for it to do so places pressure on prices, because high prices and profit margins will encourage entry by new competitors. Therefore barriers to entry can be a key determinant of industry profitability. Barriers to entry arise from several sources. Sometimes government creates barriers by restricting competition through the granting of monopolies and through regulation. Ideas and knowledge that provide competitive advantages are treated as private property when patented, preventing the others from using the knowledge and thus creating a barrier to entry. When an industry requires highly specialized technology or plants and equipment, potential entrants are reluctant to commit to acquiring specialized assets that cannot be sold or converted in to other uses if the venture fails. Most cost efficient level of production i.e., Minimum Efficient Scale (MES) which indicates the point at which unit costs for production are at minimum is another important barrier to entry for firms. To operate at less than MES there must be a consideration that permits the firm to sell at a premium price – such as product differentiation or local monopoly.

#### b) Rivalry Among the Existing Players

When there are several competitors in an industry, there will generally be more price competition and lower profit margins as competitors seek to expand their share of the market. Slow industry growth contributes to this competition because expansion must come at the expense of rival's market share. Industries producing relatively homogeneous goods are also subject to considerable price pressure, because firms cannot compete on the basis of product differentiation. When the customers of the industry can freely switch from one product to another there is a greater struggle to capture customers which increases rivalry.

### c) Pressure from Substitute Products

Pressure from substitute products means the industry faces competition from firms in related industries. To the economist, a threat of substitutes exists when a product's demand is affected by the price change of a substitute product. The availability of substitutes limits the prices that can be charged to customers.

### d) Bargaining Power of Buyers

The bargaining power of buyers is the influence that the customers have on a producing industry. If a buyer purchases a large fraction of an industry's output, it will have a considerable bargaining power and can demand price concessions. Sometimes the buyers possess a credible backward integration net thereby can threaten to buy the producing firm or its rival. But when the products are not standardized the switching cost to buyer will be very high which constraints the buyer to switch from one product to another frequently.

### e) Bargaining Power of Suppliers

A producing industry requires materials, labor and other supplies. This requirement leads to buyer supplier relationships between the industry and the firms that provide it the supplies used to create products. If the suppliers of a key input has monopolistic control over the product or they supply critical portions of buyers input, then the supplier can demand higher prices for the goods supplied and squeeze profits out of the industry. Here the key factor determining the bargaining power of suppliers is the availability of substitute products. If the substitutes are available, the supplier has little clout and cannot extract higher prices. Michael Porter identified three generic strategies – cost leadership, product differentiation and focus strategies that can be implemented at the business unit level to create competitive advantage. The proper generic strategy will position the firm to leverage its strengths and defend against the adverse effects of the five forces.

The economic and industry analysis is made by fundamental analyst in order to have a broad idea of the forces affecting the investment scenario. Apart from these two measures, the third analysis called company analysis (discussed in next chapter) is more precise, definite and accurate.

## 9.5 Summary

Fundamental analysis is a stock valuation methodology that uses financial and economic analysis to envisage the movement of stock prices. The fundamental data that is analysed could include company's financial reports and non financial information such as estimates of its growth, demand for products sold by the company, industry comparisons, economy – wide changes, changes in government policies etc. The outcome of fundamental analysis is a value (or a range of values) of the stock of the company called its 'intrinsic value' (often called 'price target' in fundamental analysts' parlance). To a fundamental investor, the market price of a stock tends to revert towards its intrinsic value. To find the intrinsic value of a company, the fundamental analyst initially takes a top-down view of the economic environment; the current and future overall health of the economy as a whole. After the analysis of the macro-economy, the next step is to analyze the industry environment which the firm is operating in. One should analyze all the factors that give the firm a competitive advantage in its sector, such as, management experience, history of performance, growth potential, low cost of production, brand name etc. This step of the analysis entails finding out as much as possible about the industry and the inter-relationships of the companies operating in the industry.

## 9.7 Self Assessment Questions

1. How is fundamental analysis useful to a prospective investor?
2. "Economic – Industry – Company (EIC) framework provides a useful approach in equity investment decision." Explain and illustrate.
3. What are the techniques used in economic analysis?
4. What do you mean by Industrial Analysis? What factors would you look in analysis of a particular industry.

## 9.8 Reference Books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# Unit -10 : Company Analysis

**Structure of Unit**



## 10.0 Objectives

After reading this unit you should be able to understand :

- Meaning and concept of Company analysis
- Framework of doing Company analysis
- Various Non – Financial parameters
- Financial parameters of performing Company analysis
- Cash flow statement analysis
- Common size statement analysis

## 10.1 Introduction

Company analysis is the last step in the E-I-C analysis framework. Economic and industry framework provides the investor with proper background against which shares of a particular company are purchased. The economy analysis helps the investor a broad outline of the prospects of the growth in the economy. The industry analysis helps the investor to select the industry in which investment would be rewarding. Now he has to decide the company in which he should invest his money. Company Analysis provides the answer to this question. It deals with the estimation of return and risk of individual shares. This calls for information. Many pieces of information influence investment decisions. Information regarding companies can be broadly classified into two broad categories: Internal & External. Internal information consists of data and events made public by companies concerning their operations. The internal information sources include annual reports to shareholders, public and private statements of officers of the company, the company's financial statements etc. External sources of information are those generated independently outside the company.

## 10.2 What is Company Analysis?

Company analysis is a method of evaluating and assessing the competitive position of a firm, its earning and profitability, the efficiency with which it operates, its financial position and its future with respect to the earnings of its shareholders. In the company analysis the inventor assimilates the several bites of information related to the company and evaluates the present and the future values of the stock. The risk and return associated with the purchase of the stock is analysed to take better investment decisions. The valuation process depends upon the investors' ability to elicit information from the relationship and inter relationship among the company related variables.

Analysis of the company consists of measuring its performance and ascertaining the cause of this performance. When some companies have done well irrespective of economic or industry failure, this implies that there are certain unique characteristics for this particular company that had made it a success. The identification of these characteristics, whether quantitative or qualitative, is referred to as company analysis.

Quantitative indicators of company analysis are the financial and operational efficiency indicators. These indicators are the profitability and financial position indicators analyzed through the income and balance sheet statements, of the company. Operational indicators are capacity utilization and cost versus sales efficiency of the company, which includes the marketing edge of the company.

Besides the quantitative factors, qualitative factors of a company also influence investment decision process of an investor. The present and the future values of a company's share price are affected by a number of factors and they are as follows:-

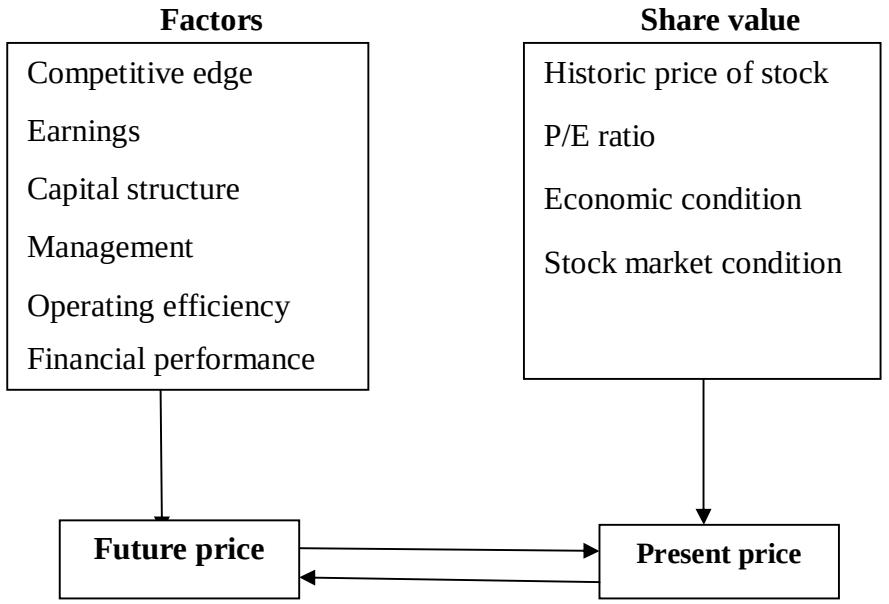


**Fig 10.1 Factors that affect present and future values**

## 10.3 Frame work of company analysis

Company analysis is made on the basis of two major parameters:-

10.3.1 Nonfinancial parameters
10.3.2 Financial parameters

A good analysis gives proper weightage to both these aspects and tries to make an appropriate judgment

## Activity A :

1. What is the framework of company analysis?

### 10.3.1 Non Financial Parameters Include

a) History and business of the company
b) Management team
c) Vision and mission of the co.
d) Product range
e) Future plans of expansion/diversification
f) Research & Development
g) Market share
h) Corporate Governance
i) Location and Labour – Management Relations
j) Goodwill
k) Government controls and Regulations
l) Customers
m) Competition
n) Competitive Advantage

**a) History and Business of the Company**

The investor should know the history and business of the company, whether the company is a well established one, whether it has a good product range what are the growth potentials of the company.

**b) Management Team**

The single most important factor one should consider when investing in a company, is its management. It is upon the quality, competence and vision of the management that the future of company rests. A good, competent management can make a company grow while a weak, inefficient management can destroy a thriving company. Some of the qualitative indicators of the management team to be looked for are:-

- Integrity of Management
- Past record of management

- How highly is the management rated by its peers in the same industry?
- How the management fares in adversity?
- The depth of knowledge of the management
- The management must be open, innovative and must also have a strategy

**c) Vision and Mission of Company**

A mission statement is spelled out to narrate what the organization is about. It talks about what the company is right now. It lists the broad goals for which the company is formed. It discusses in details what the company does, what the structure is and what its plans are. A vision statement talks about what the company wants to be. It describes what the "vision" of the company is for its future. It lists where the company sees itself some years from now.

**d) Product range**

Growing companies like FMCG keeps launching new products with regular frequency. They are having full range of products. Hence, investors must examine whether the company under review belongs to this group or not.

**e) Future plans of expansion/diversification**

Diversification is a corporate strategy to increase sales volume from new products and new markets. Diversification can be expanding into a new segment of an industry that the business is already in, or investing in a promising business outside of the scope of the existing business. In order to improve profitability and to reduce the business risk, many companies resort to diversification. Therefore this issue is to be carefully examined by the investor.

**f) Research and Development**

New product design and development is more often than not a crucial factor in the survival of a company. In an industry that is changing fast, firms must continually revise their design and range of products.This is necessary due to continuous technology change and development as well as other competitors and the changing preference of customers Growing companies spend substantial amount on R & D to improve their existing product, introduce new products, etc.

**g) Market share**

Understanding a company's present market share can tell volumes about the company's business. The fact that a company possesses an 80% market share tells that it is the largest player in its market by far. Furthermore, this could also suggest that the company possesses some sort of "economic moat," in other words, a competitive barrier serving to protect its current and future earnings, along with its market share. Market share is important because of economies of scale. When the firm is bigger than the rest of its rivals, it is in a better position to absorb the high fixed costs of a capital-intensive industry.

**h) Corporate Governance**

Corporate governance describes the policies in place within an organization denoting the relationships and responsibilities between management, directors and stakeholders. These policies are defined and determined in the company charter and its bylaws, along with corporate laws and regulations. The purpose of corporate governance policies is to ensure that proper checks and balances are in place, making it more difficult for anyone to conduct unethical and illegal activities.

**i) Location and Labour- Management Relations**

The location of the company's manufacturing facilities determines its economic viability which depends on the availability of crucial inputs like power, skilled-unskilled labour and raw-materials, etc. Nearness to markets is also an important factor to be considered. In the recent past, the investment manager has begun looking into the state of labour-management relations in the company under consideration and the area where it is located.

**j) Goodwill**

The value of a company's brand name, solid customer base, good customer relations, good employee relations and any patents or proprietary technology represent goodwill. It is an assumed value of the attractive force that generates sales revenue in a business, and adds value to its assets. Goodwill is an intangible but saleable asset, almost indestructible except by indiscretion. Goodwill includes the worth of corporate identity, and is enhanced by corporate image and a proper location. Its value is not recognized in account books but is realized when the business is sold, and is reflected in the firm's selling price by the amount in excess over the firm's net worth. In well established firms, goodwill may be worth many times the worth of its physical assets.

**k) Government Control and Regulations**

The investor must assess the implications of government control and regulations. A regulated market or controlled market, is a market where the government controls the forces of supply and demand, such as who is allowed to enter the market or what prices may be charged. It is common for some markets to be regulated under the claim that they are natural monopolies. For example, telecommunications, water, gas or electricity supply. Often, regulated markets are established during the partial privatisation of government controlled utility assets.

A variety of forms of regulations exist in a regulated market, these include controls, oversights, anti discrimination, environment a protection, taxation and labor laws, etc. Certain industries are heavily regulated due to the importance or severity of the industry's products and/or services. As important as some of these regulations are

to the public, they can drastically affect the attractiveness of a company for investment purposes.

In industries where one or two companies represent the entire industry for a region (such as utility companies), governments usually specify how much profit each company can make. In these instances, while there is the potential for sizable profits, they are limited due to regulation. In other industries, regulation can play a less direct role in affecting industry pricing.

**l) Customers**

Some companies serve only a handful of customers, while others serve millions. In general, it's a red flag (a negative) if a business relies on a small number of customers for a large portion of its sales because the loss of each customer could dramatically affect revenues.

**m) Competition**

Simply looking at the number of competitors goes a long way in understanding the competitive landscape for a company. Industries that have limited barriers to entry and a large number of competing firms create a difficult operating environment for firms.

One of the biggest risks within a highly competitive industry is pricing power. This refers to the ability of a supplier to increase prices and pass those costs on to customers. Companies operating in industries with few alternatives have the ability to pass on costs to their customers.

**n) Competitive Advantage**

Another business consideration for investors is competitive advantage. A company's long-term success is driven largely by its ability to maintain a competitive advantage - and keep it. Powerful competitive advantages, such as Tata’s brand name and HUL domination of the FMCG business , create a moat around a business allowing it to keep competitors at bay and enjoy growth and profits. When a company can achieve competitive advantage, its shareholders can be well rewarded for decades.

## Activity B :

1. Discuss the various non – financial factors considered to be most important in appraising companies in different industries.

### 10.3.2 Financial Parameters :-

Financial analysis is the selection, evaluation and interpretation of financial and other pertinent information, to assist in investment and financial decision-making. Financial analysis may be used internally to evaluate issues such as employee performance, the efficiency of operations, and credit policies, and externally to evaluate potential investments and the credit-worthiness of borrowers, among other things. The analyst

draws the financial data needed in financial analysis from many sources. The primary source is the data provided by the company itself in its annual report and required disclosures. The annual report comprises the income statement, the balance sheet, and the statement of cash flows etc.

Besides information that companies are required to disclose through financial statements, other information is readily available for financial analysis. Information such as the market prices of securities of publicly traded companies can be found in the financial press and the electronic media daily. Similarly, information on stock price indices for the industries and for the market as a whole is available in the financial press. In other words, financial analysis is figuring out what information to use and how to use it. The tools that we use to analyse the company's financial information include :

**(A) Financial ratio analysis**
**(B) Cash flow analysis**
**(C) Common size analysis**.

**(A) Financial Ratio Analysis** :

An analysis of its financial statements for the past few years would help the investment manager in understanding the financial solvency and liquidity, the efficiency with which the funds are used, the profitability, the operating efficiency and the financial and operating leverages of the company. Fundamental analysis ratios are used to both measure the performance of a company relative to other companies in the same market sector and to value a company. For this purpose, certain fundamental ratios have to be calculated.There are three main types of ratios – those dealing with:

1) Financial Stability Ratios – short and long-term
2) Operating Efficiency Ratios
3) Investment Performance Ratios

**1) Financial Stability Ratios – Short and Long term**

**(A) Short Term Stability**

These ratios reflect a company's ability to meet its current or short-term financial commitments.

**a) Current Ratio**

This ratio is a measure of a company's working capital and reflects the ability of a firm to meet its short-term obligations. In general, a ratio of 2 to 3 is usually considered good.

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$$

Too small a ratio indicates that there is some potential difficulty in covering obligations. A high ratio may indicate that the firm has too many assets tied up in current assets and is not making efficient use to them.

**b) Quick Ratio (Acid Test Ratio)**

The quick (or acid-test) ratio is a more stringent measure of liquidity. Only liquid assets are taken into account. Inventory and other assets are excluded, as they may be difficult to dispose of.

$$\text{Quick Ratio} = \frac{\text{Current Assets - Inventory}}{\text{Current Liabilities}}$$

This is often more meaningful than the current ratio as some current assets may not be readily convertible to cash eg inventory. It is calculated by dividing current liabilities into current assets less inventory. It is generally accepted that the quick ratio should not be less than 1.0. While possible to operate with a lower level a value significantly less than 1.0 is cause for concern, while 1.5 is excellent.

**(B) Long Term Liquidity/Solvency**

These ratios reflect the company's borrowings - how much, for how long and how easily interest payments can be met and are about its healthiness and ability to survive in the longer term.

(a) **Debt to Equity (Gearing Ratio)**

Debt to equity is calculated by dividing the company's total debt by shareholders funds less intangibles.

$$\text{Debt to Equity} = \frac{\text{Total Debt}}{\text{Shareholders' Funds - Intangibles}}$$

This ratio measures the amount of long term borrowing (interest bearing) compared to shareholder's equity and reflects choices made by management about how it raises funds - either borrowing or raising new equity. Generally the lower the better but can also be too low for a company to be effectively using its assets – some debt is usually good. It can vary significantly from sector to sector and should generally be compared within the sector or against the sector "average".

**(b) Interest Coverage ratio**

This ratio indicates the degree of protection available to creditors by measuring the extent to which earnings available for interest covers required interest payments.

$$\text{Interest Coverage Ratio} = \frac{\text{Earnings before interest and tax}}{\text{Interest expense}}$$

This ratio shows the number of times a company's interest payments are covered by its earnings and reflects a company's ability to meet interest payments and make profits in

bad times. The higher the ratio the better as this provides more security. A ratio of less than 2.0 may indicate that the company will have problems meeting interest charges while ratios greater than 3-4 are fine and provide increasing security.

**(2) Operating Efficiency Ratios**

These ratios reflect how efficiently management is using the company's assets and comparisons between companies should generally be made within sectors comparing like against like.

**(a) Asset Turnover**

This is calculated by dividing assets into sales.

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Assets}}$$

This indicates how efficiently a company is using its assets to create sales. Some companies require expensive assets for eg., a steel maker, while service companies may have few assets. The quicker the turnover the better the ratio, but the ratio varies between industries/sectors.

**(b) Inventory Turnover**

$$\text{Inventory Turnover} = \frac{\text{Cost of Sales}}{\text{Inventory}}$$

The figure is often hard to find and is usually calculated by substituting sales for cost of sales (cost price of the goods sold). It indicates how quickly a company turns over its inventory i.e., how quickly it sells its warehoused goods. The quicker the turnover the better but it varies significantly between industries/sectors. Within a company the comparison should be with previous years and between companies be made within sectors.

**(c) Accounts Payable Turnover (Average Payment Period)**

$$\text{Accounts Payable Turnover} = \frac{\text{Trade Creditors}}{\text{Sales}} \times 365$$

This ratio represents the time, on average, in days, it takes for a company to pay its bills (trade creditors). Generally the longer the better as a company has use of the money for a longer period and can use it for other purposes or it may need to use less of a borrowing facility. However, if a company is progressively taking longer to pay its bills this may be cause for concern and may indicate cash flow problems.

**(d) Accounts Receivable Turnover (Average Collection Period)**

$$\text{Accounts Receivable Turnover} = \frac{\text{Trade Debtors}}{\text{Sales}} \times 365$$

This ratio represents the time, on average, in days, it takes for a company to collect money owing to it (trade debtors). This measures the length of time the company's debtors take to pay their accounts and generally the shorter the better.

**(3) Investment Performance Ratios**

These ratios relate the information in company financial statements to the company's shares and reflect how the stock market considers the company.

**(a) Total Asset Turnover**

$$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}}$$

It is a measure of how hard the company is working its assets to create sales. The greater the value the more efficiently assets have been used to generate sales.

**(b) EBIT Margin (Earnings Before Interest and Tax)**

$$\text{EBIT Margin} = \frac{\text{EBIT}}{\text{Sales}} \times 100$$

This shows how much profit the company is making as a percentage of sales. A rising profit margin (irrespective of whether sales/profits are rising or falling) indicates greater efficiency. Falling costs as a percentage of sales can be due to interest fluctuations. Generally a high margin is better but a lower margin will be found with high turnover goods. EBIT is a measure of operating efficiency.

**(c) Net Profit Margin or Operating Profit Margin (NOPAT)**

This ratio is similar to EBIT margin but uses profit after tax. It is a measure of corporate efficiency and is calculated by dividing operating profit after tax by operating revenue (excluding abnormals and extraordinary items because they distort the figures).

$$\text{Net Profit Margin} = \frac{\text{Operating Profit After Tax}}{\text{Operating Revenue}} \times 100$$

Acceptable values vary between sectors so compare like with like and look for a company where the profit margin increases with time.

**(d) Return on Assets (ROA) or Return on Investment (ROI)**

$$\text{Return on Assets} = \frac{\text{EBIT}}{\text{Total Assets}} \times 100$$

This is a measure of a company's ability to make profits from its assets. It is an important and dynamic ratio as it reflects the links between operating revenue, costs and profits with the underlying asset base. It declines if: sales fall, costs increase faster than sales or assets increase faster than post tax operating profit. It shows how effectively assets are being used and is a measure of operational management rather than financial management. Look for a return that compares favorably within the sector plus increases

over time. It can be compared with current interest rates to see what could theoretically be earned if a company sold off all its assets and invested them in an interest bearing deposit. Note that the EBIT figure in reports spans 12 months while the assets figure is an end of year figure and a particularly large purchase late in year may swell assets but contribute little to the year's profits. The higher the ratio the better, but only compare like with like. Book value can also change quickly at times e.g., times of rapid inflation so make sure these are accurate.

**(e) ROE (Return on Equity/Return on Shareholders' Equity)**

$$\text{Return on Equity} = \frac{\text{Net Profit After Tax}}{\text{Shareholders' Equity}} \times 100$$

ROE measures the return a company achieves with shareholders' funds and the higher the better. A high ROE should enable a company to pay a good dividend and to plough back funds for growth. Ideally a company should achieve an ROE greater than current interest rate or at least have the prospect of doing so. It is one of best indicators of overall performance and can be compared with the return from any other investment. It can also be calculated by dividing return on assets by shareholders' equity. A company with a high ROE over a period of time is a highly desirable investment.

**(f) EPS (Earnings per Share)**

The earnings per share is the portion of the profit earned for every ordinary share on issue. It shows at a glance the growth in earnings from one year to the next and the relative size of earnings to dividends. It is also essential for calculating the Price Earnings ratio. EPS is calculated by taking the net profit, if any, and dividing by the number of ordinary shares.

$$\text{Earnings per Share} = \frac{\text{Net Profit After Tax}}{\text{No. Shares on Issue}}$$

EPS shows how much net profit is earned for each share and is usually shown as an amount (in Rupees) per share. This is one ratio where analysts may use different calculation methods as some remove abnormal and the number of shares may vary throughout the year in which case the year end figure is not correct. It is therefore best to use a weighted average of the number of shares on issue during the year. After determining the current EPS, look for trends. Has EPS been growing or falling, and how much is from normal operations rather than one off events? If EPS is the same as last year, has there been an increase in the shares on issue? Remember EPS does not lend itself to the determination of 'quality'. In bear markets analysts look much more closely at the quality of earnings and quickly dismiss one-off items.

**(g) Earnings Yield**

$$\text{Earnings Yield} = \frac{\text{Earnings per Share}}{\text{Current Share Price}}$$

It is a useful measure of evaluating company performance and can be compared with general interest rates from cash etc. Dividend yield has some comparative shortcomings because it depends upon the payout ratio decided upon by the company and ignores the potential benefit to the company of that part of its profits which it retains and ploughs back into the company.

**(h) Price Earnings Ratio (PE)**

$$\text{Price Earnings Ratio} = \frac{\text{Market Price per Share(MPS)}}{\text{Earnings per Share (EPS)}}$$

This ratio is widely used - a PE of 10 means that is would take ten years for the investor to recoup their initial outlay in the form of dividends paid by the company, assuming that 100% of earnings are paid out in dividends (and this is maintained every year) and no new shares are issued.

Therefore companies with a high PE will take longer to return an investor's outlay than a company with a lower PE. Growth companies will often have higher PEs as they pay out lower dividends as a percentage of profits and have a lower dividend yield. This is based on market expectations that earnings growth is strong and will continue. Although PEs enables a comparison between companies, one problem is that the formula includes share price. Therefore during a market correction all PEs will fall yet nothing about a particular company may have changed. In addition, the PE is based upon historic profits which may not reflect the profit outlook for the current year and this combined with lower share prices my give artificially low PEs. The media also uses historic PEs. As the share price is usually based upon future earnings rather than last years (i.e., expectations are already in the price) then we need an estimate of future earnings which must usually be obtained from a broker.

The PE ratio reflects the market's view of the earnings potential of the company. A low PE ratio suggests that the market expects no growth or lower profits, while a high PE ratio suggests that the market expects high growth and a higher profit. Compare the PE ratio of a company you are looking at to that of other companies in the same sector and the market as a whole.

**(i) Dividend per Share (DPS)**

This is the amount that the company chooses to pay out of net profit to itsshareholders, expressed as a number of Rupee per share. The company has the choice of paying out all of the net profit as a dividend, part of, or none of the net profit. It depends on whether or not the company needs the money to fund growth or repay debt.

$$\text{Dividend Per Share} = \frac{\text{Total dividend paid}}{\text{Number of shares}}$$

A thorough analyst does not merely observe consistent dividend payment over many years and then determine the investment to be 'safe' and the company a 'Blue chip'. It is essential to check if the dividends were paid from the current year's earnings or from retained earnings from previous years.

To do that you can check the payout ratio or dividends/earnings which show what percentage of earnings was paid out as a dividend. The reciprocal is earnings/dividends which is the dividend cover ratio. If the dividend cover ratio is less than one then the dividends must have been paid out of retained earnings.

Sometimes paying out all the earnings as dividends is not a good thing, for example, in the case of a company being able to obtain an above average rate of return funding expansion or acquisition instead of paying a dividend.

At other times, if the company has surplus cash it may pay out a special dividend or announce a return of capital.

**(j) Dividend Yield**

$$\text{Dividend Yield} = \frac{\text{Dividend Per Share}}{\text{Current Share Price}} \times 100$$

The dividend yield is the dividend expressed as a percentage of the share price. This is the rate that can be used to compare the income generated from one investment to that from other investments. As with EPS best to use estimated dividends as media yield calculations are based upon historic dividend figures. High dividend yields are attractive but they are a representation of past payouts. They are not a guarantee of future dividend amounts. The dividend yield figure may also be affected by fluctuating share prices.

**(k) Dividend Payout Ratio/Dividend Cover**

The dividend payout ratio is calculated as:

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend per Share}}{\text{Earning per Share}}$$

whereas dividend cover is the reverse:

$$\text{Dividend Cover} = \frac{\text{Earnings per Share}}{\text{Dividend per Share}}$$

Both provide the same information namely the proportion of profit after tax paid out by way of dividends to ordinary shareholders. The ratio of profit paid out reflects the company's dividend policy. Note that company policy varies with some preferring to pay out a higher ratio of profits while others elect to pay out a lower proportion thereby retaining more funds for growth (this ultimately should flow through to dividend yield in future years).

**(l) Net Assets per Share or Net Tangible Assets per Share (NTA)**

$$\text{Net Assets per Share} = \frac{\text{Net Worth – Fictitious Assets - Intangibles}}{\text{Number of Ordinary Shares}}$$

This is a measure of whether shares are undervalued or overvalued. A share price above NTA suggests good use is being made of the assets and that the market is prepared to pay a price premium. If price is below NTA it suggests management is not utilising assets to their best advantage and the company may be vulnerable to takeover. NTA per share is more relevant for companies valued partly for their net asset backing e.g. listed real estate companies or investment funds.

**(m)Market to Book Ratio or Price to Book Value or Price to Assets Ratio**

$$\text{Price to Book Value} = \frac{\text{Share Price}}{\text{Book Value Per Share(BVPS)}}$$

BVPS = (Shareholders' Equity – Intangibles)/Number of Shares

The ideal is a ratio of 1 or less as this means for every Rupee of share price you receive a rupee of net asset value. If the ratio is more than 1, you will be paying a premium over and above the value of the net assets.

**(n) Price/Sales Ratio (PSR or P/S)**

Price to Sales Ratio compares the market value of a company's shares to its sales. It is calculated as:

$$\text{Price to Sales} = \frac{\text{Share Price}}{\text{Sales}}$$

PSR reflects a company's underlying financial strength so a company with a low PSR is more attractive while one with a high PSR is less attractive. Investors should avoid stocks with a PSR of 1.5 or more and should sell a stock whose PSR is between 3 to 6.

**(o) Price Earnings Growth (PEG)**

This ratio is widely used and is calculated as:

$$\text{Price Earnings Growth} = \frac{\text{P/E Ratio}}{\text{Growth Rate in \%}}$$

So a P/E of 10 divided by a growth rate of 10% would have a PEG of 1 and a P/E of 20 divided by a growth rate of 20% would have a PEG of 1. But a P/E of 20 divided by a growth rate of 10% would have a PEG of 2 and a P/E of 10 divided by a growth rate of 20% would have a PEG of 0.5. In general, the P/E should equal the long term growth rate in %. So a PEG ratio of one is considered to represent fair value and a PEG ratio greater than one indicates a more "expensive" stock. This ratio is a useful high level check to see whether the P/E is justified. One should compare with the average market

figure at the time and the average for the industry. Small investors usually use a PEG under .6 for small caps or use under .75 or .8 for mid/large caps as being good value.

**Financial Ratios - Return on Equity and the Dupont System**

A system of analysis has been developed that focuses the attention on all three critical elements of the financial condition of a company: the operating management, management of assets and the capital structure. This analysis technique is called the "DuPont Formula". The DuPont Formula shows the interrelationship between key financial ratios. It can be presented in several ways.

The first is:

Return on equity (ROE) = net income / total equity

If we multiply ROE by sales, we get:

Return on equity = (net income / sales) * (sales / total equity)

Said differently:

ROE = net profit margin * return on equity

The second is:

Return on equity (ROE) = net income / total equity

If in a second instance we multiply ROE by assets, we get:

ROE = (net income / sales) * (sales / assets) * (assets / equity)

Said differently:

ROE = net profit margin * asset turnover * equity multiplier

**Uses of the DuPont Equation**

By using the DuPont equation, an analyst can easily determine what processes the company does well and what processes can be improved. Furthermore, ROE represents the profitability of funds invested by the Owners of the firm. All firms should attempt to make ROE as high as possible over the long term. However, analysts should be aware that ROE can be high for the wrong reasons. For example, when ROE is high because the equity multiplier is high, this means that high returns are really coming from overuse of debt, which can spell trouble.

If two companies have the same ROE, but the first is well managed (high net-profit margin) and managed assets efficiently (high asset turnover) but has a low equity multiplier compared to the other company, then an investor is better off investing in the first company, because the capital structure can be changed easily (increase use of debt), but changing management is difficult.

## Activity C :

1. How do ratio analysis effect the financial health of a company?

**(b) Cash Flow Analysis**

The cash flow statement shows how much cash comes in and goes out of the company over the quarter or the year. It shows how much actual cash a company has generated. The statement of cash flows is critical to understanding a company's fundamentals. It shows how the company is able to pay for its operations and future growth. Indeed, one of the most important features one should look for in a potential investment is the company's ability to produce cash. Just because a company shows a profit on the income statement doesn't mean it cannot get into trouble later because of insufficient cash flows. A close examination of the cash flow statement can give investors a better sense of how the company will fare. Companies produce and consume cash in different ways, so the cash flow statement is divided into three sections: cash flows from operations, financing and investing. Basically, the sections on operations and financing show how the company gets its cash, while the investing section shows how the company spends its cash.

**Cash Flows from Operating Activities**

This section shows how much cash comes from sales of the company's goods and services, less the amount of cash needed to make and sell those goods and services. Investors tend to prefer companies that produce a net positive cash flow from operating activities. High growth companies, such as technology firms, tend to show negative cash flow from operations in their formative years. At the same time, changes in cash flow from operations typically offer a preview of changes in net future income. Normally it's a good sign when it goes up. Watch out for a widening gap between a company's reported earnings and its cash flow from operating activities. If net income is much higher than cash flow, the company may be speeding or slowing its booking of income or costs.

**Cash Flows from Investing Activities**

This section largely reflects the amount of cash the company has spent on capital expenditures, such as new equipment or anything else that needed to keep the business going. It also includes acquisitions of other businesses and monetary investments. You want to see a company re-invest capital in its business by at least the rate of depreciation expenses each year. If it doesn't re-invest, it might show artificially high cash inflows in the current year which may not be sustainable.

**Cash Flow From Financing Activities**

This section describes the goings-on of cash associated with outside financing activities. Typical sources of cash inflow would be cash raised by selling shares and debentures or by bank borrowings. Likewise, paying back a bank loan would show up as a use of cash flow, as would dividend payments and common stock repurchases.

**Cash Flow Statement Considerations**

Fundamental investors are attracted to companies that produce plenty of free cash flows (FCF). Free cash flow signals a company's ability to pay debt, pay dividends, buy back stock and facilitate the growth of business. Free cash flow, which is essentially the excess cash produced by the company, can be returned to shareholders or invested in new growth opportunities without hurting the existing operations. The most common method of calculating free cash flow is:

**Free cash Flow = Net Income + Dep. – Changes in WC – Capital Exp.**

Ideally, investors would like to see that the company can pay for the investing figure out of operations without having to rely on outside financing to do so. A company's ability to pay for its own operations and growth signals to investors that it has very strong fundamentals.

## Activity D :

1. How does company analysis help investors in choosing securities?

**( c) Common Size Analysis**

Common Size Analysis is the analysis of financial statement items through comparison among financial statement or market data. Common size analysis compares each item in a financial statement with a benchmark item. Common size analysis is useful in analyzing trends in profitability and trends in investments and financing activity. Common size statement is constructed by restating each account in a statement as a percentage of some benchmark:

- For the income statement, the benchmark is sales; each item in the income statement is restated as a percentage of sales.
- For the balance sheet, the benchmark is total assets; each item in the balance sheet is restated as a percentage of total assets.

Common size analysis is useful because it allows investors to spot trends that would not be obvious using other means.

## 10.4 Summary

In the previous chapter we have discussed the importance of economy and industry analysis and how it is performed. In this chapter , we have discussed in the company analysis. Company analysis is a study of the variables that influences the future of a firm both qualitatively and quantitatively. It is a method of assessing the competitive position of a firm, its earning and profitability, the efficiency with which it operates, its financial position its future with respect to the earning of its shareholders. The outcome of company analysis is a value of the stock of the company called its 'intrinsic value'. To a fundamental investor, the market price of a stock tends to revert towards its intrinsic value. If the intrinsic value of a stock is above the current market price, the investor would purchase the stock because he believes that the stock price would rise and move towards its intrinsic value. If the intrinsic value of a stock is below the market price, the investor would sell the stock because he believes that the stock price is going to fall and come closer to its intrinsic value. While conducting the company analysis the investor should analyse carefully the company's financial statements such as profit and loss account, balance sheet statement of changes in financial / cash position. The tools of conducting company analysis can be broadly divided into two : financial and non financial factors.

## 10.5 Self Assessment Questions

1. What is the meaning of company analysis? What financial statements in your opinion are helpful in undertaking the company's prospects?
2. Explain the steps of performing company analysis.
3. How does management of a company affect its stock prices?
4. In what way the ratio analysis is an indicator of a company's health. Give examples.
5. Explain in brief the different ratios for analyzing the financial strength of a company. How does these ratios help in selecting shares?
6. What is the need of company analysis? Do we need the company analysis? Explain.
7. What are method adopted to analyse the financial statements of a company?

## 10.6 Reference Books


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# Unit –11 : Technical Analysis

**Structure of Unit**



## 11.0 Objectives

After reading this unit you should be able to understand :

- Meaning of Technical Analysis and Assumptions
- Destination between Technical and Fundamental Analysis
- Tools and Techniques of Technical Analysis
- Charting as a Technical Tool
- Types of charts
- Important Chart Patterns
- Criticisms of Technical Analysis

## 11.1 Introduction

The share price movement is analyzed broadly with two approaches namely, fundamental approach and the technical approach. Fundamental approach analyses the share price on the basis of economic, industry and company statistics. If the price of the share is lower than its intrinsic value, investor buys it. But, if he finds the price of the share higher than the intrinsic value he sells and gets profit. The technical analyst mainly studies the stock price movement of the security market. If there is an up trend in the price movement investor may purchase the script. With the onset of fall in price he may sell it and move from the script. Basically, technical analysts and the fundamental analysts aim at good return on investment.

## 11.2 What is Technical Analysis

Technical analysis is a method of evaluating securities by analyzing the statistics generated by market activity, such as past prices and volume. Technical analysts make use of historical price and volume data to prepare charts, graphs and other tools in order to identify patterns that can suggest future activity.

It is a school of thought that the share price depends purely on the supply demand of the share and hence looking at the previous trend buy or sale, it is possible to predict the future price of a script. According to them, price are determined in the following manner:–

(a) Demand & supply of securities are considered to be the main essence of the changes in the securities price.

(b) Technical analysis is a method of presenting financial data of the past behavior and to find out the history of price movements and depict these on a chart.

(c) The chart have a method of prediction of significant price movements, depicts meaningful patterns and the practical applications of these patterns help in determining future prices.

(d) Typical charts are made for making prediction about a single security and Charts are also used to find out the total broad spectrum of the market.

## 11.3 Assumptions of Technical Analysis

The technical school of thought has certain assumptions. These are:

(a) The market value of a security is related to demand and supply factors operating in the market.

(b) There are both rational and irrational factors which surround the supply & demand factor of a security.

(c) Security price behave in a manner that their movement is continuous in a particular direction for some length of time.

(d) The movement of security prices if going upward will continue to do so for a while barring certain minor fluctuations in stock prices.

(e) Trends in stock prices have been seen to change when there is a shift in the demand and supply factors.

(f) Whenever there are shifts in demand and supply they can be detected through charts prepared specially to show market action.

(g) Patterns which are projected by charts record price movements and these recorded patterns are used by analysts to make forecasts about the movement of price in future.

**Activity A :**

1. What is Technical Analysis? Explain its assumptions.

## 11.4 Technical and Fundamental Analysis- Distinction

**Table : 11.1**

**Distinction between Technical & Fund Analysis**

| Fundamental Analysis | Technical Analysis |
|---|---|
| • Focuses on the economic forces of Demand & Supply that causes prices to move<br>• Finding the intrinsic value of the market/asset<br>• Characteristics of a company is employed in the analysis<br>• Effects of economic factors on a stock such as earning reports, cash flow, etc are concerned<br>• Fundamental analysts try to establish long-term values.<br>• Investors, who invest on long-term basis, use the results of fundamental analysis. | • Analysis using past data of Demand & Supply<br>• Study of historical graphs is stressed<br>• Identify a trend at a relatively early stage & ride on that trend until the weight of the evidence shows or proves that the trend has reversed<br>• Deals in probabilities, never certainties<br>• Technical analysts try to predict short-term price movements<br>• Speculators, who want to make quick money, mostly use results of technical analysis |

## 11.5 Tools of Technical Analysis

The technician must identify the trend and recognize when one trend comes to an end and prices set off in the opposite direction. His central problem is to distinguish between reversals within a trend and real changes in the trend itself. This problem of sorting out price changes is critical, since prices do not change in a smooth, uninterrupted fashion.

The two variables concerning groups of stocks or individual stock are:

1. Behavior of prices, and
2. Volume of trading influenced by changing prices.

The use of technical 'indicators' to measure the direction of overall market should precede any technical analysis of individual stock, because of systematic influence of the general market on stock prices. In addition, some technicians feel that forecasting aggregates are more reliable, since individual errors can be filtered out. Indicators of Technical analysis can be tabulated as:

**Table : 11.2**

**Indicators of Technical Analysis**

| Price Indicators | Volume Indicators | Other Indicator |
|---|---|---|
| (1) Dow Theory<br>(2) Market Breadth<br>(3) Advance-Decline Ratio<br>(4) New Highs & Lows<br>(5) Active Stock Lists<br>(6) Confidence Indicator | (1) Short Selling<br>(2) Long Positions<br>(3) Future & Options trading Data | (1) Mutual fund activity<br>(2) Fll's & FI's trends |

Ironically, there is no standard procedure followed by all technical analysts. Basically they follow the Dow theory and a number of empirical rules developed by chartists for interpreting market movement. Many analysts use the moving average methods in addition to the Dow theory for predicting price trend.

The following are the popular methods of doing technical analysis:

### 11.5.1 Dow Theory

The Dow Theory, originally propounded by Charles Dow in 1900,

is the oldest and most publicized technical analysis to identify trends. This theory seeks to study the major movements in the market with a view to establish trends. Until a reversal occurs, a trend is assumed to exist. It is important to note that, the Dow theory only describes the direction of market trends and does not attempt to forecast future movement or estimate either the duration or the size of such market trend. The theory uses the behavior of the stock market as a barometer of business conditions, rather than as a basis for forecasting stock prices themselves. Therefore, the tenets of the theory were framed with reference to market indexes, specifically constructed to measure market trends.

**Trend**

One of the most important concepts in technical analysis is that of trend. The meaning in finance isn't all that different from the general definition of the term - a trend is really nothing more than the general direction in which a security or market is headed. In other words, defining a trend goes well beyond the obvious. In any given chart, you will probably notice that prices do not tend to move in a straight line in any direction, but rather in a series of highs and lows. In technical analysis, it is the movement of the highs and lows that constitutes a trend. For example, an uptrend is classified as a series of higher highs and higher lows, while a downtrend is one of lower lows and lower highs.

**Types of Trend :** There are three types of trend:

1) Positive or advancing trend.
2) Negative or declining trend.
3) Neutral or sideways trading range.

**1) Positive Trend** (Characterized by higher highs and higher lows) : In a positive trend each up move extends to new price highs while the sell-offs in between do not decline as far as the price levels seen on previous sell-offs. Drawing a line through the lows yields the positive trend line. It is also known as Uptrend.

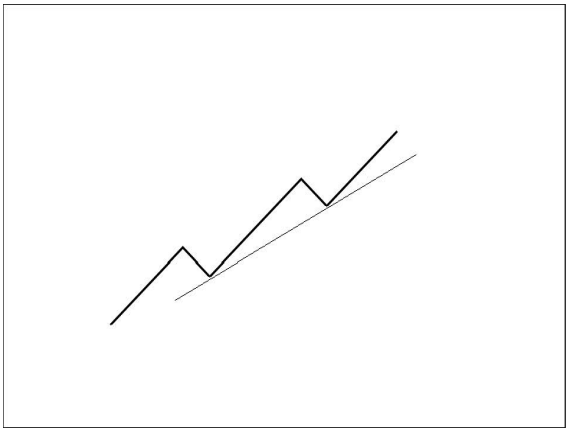

**Fig.11.1 Positive Trend**

**2) Negative Trend** (Characterized by lower highs and lower lows) : In a negative trend each down move extends to new price lows while rallies in between do not advance as far as the price levels seen on previous rallies. Drawing a line through the highs yields the negative trend line. It is also known as Downtrend.

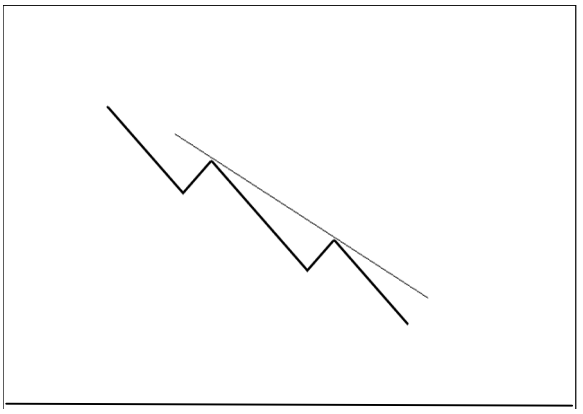

**Fig.11.2 Negative Trend**

**3) Neutral Trend** (Characterized by a sideways trading range):

In a neutral trend the price pattern typically oscillates between an upper limit and a lower limit. Drawing lines through these upper limits and lower limits identifies the trading range. It is also known as Sideways or Horizontal trend.

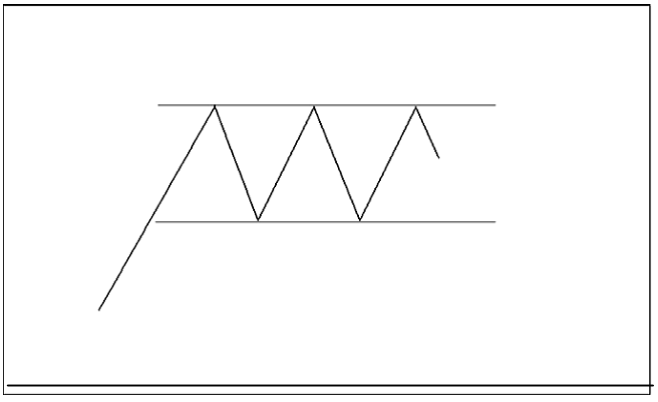

**Fig.11.3 Neutral Trend**

**Trend reversal** : The rise or fall in share price cannot go on forever. The share price movement may reverse its direction. Before the change of direction, certain pattern in price movement emerges. The change in the direction of the trend is shown by violation of the trend line. Violation of the trend line means the penetration of the trend line. If a scrip price cuts the rising 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.

The six basic tenets of the Dow Theory are as following:

**(A) The Market has Three Movements:**

The Dow Theory classifies the movements in stock prices into:

**a) Primary Movements**

In Dow theory, the primary trend is the major trend of the market, which makes it the most important one to determine. Dow determined that a primary trend will generally last between one and three years but could vary in some instances, represent the major market trends. The primary trends are the long range cycle that carries the entire market up (bull market) or down(bear market).

**b) Secondary Movements**

In Dow theory, a primary trend is the main direction in which the market is moving. Conversely, a secondary trend moves in the opposite direction of the primary trend, or as a correction to the primary trend. For example, an upward primary trend will be composed of secondary downward trends. This is the movement from a consecutively higher high to a consecutively lower high. In a primary downward trend the secondary trend will be an upward move, or a rally. This is the movement from a consecutively lower low to a consecutively higher low. Thus, the secondary trend acts as a restraining force on the primary trend.


**Fig.11.4 Dow Theory Trends**

**c) Minor Movements**

The last of the three trend types in Dow theory is the minor trend, which is defined as a market movement lasting less than three weeks . The minor trend is generally the corrective moves within a secondary move, or those moves that go against the direction of the secondary trend. The minor trends are of very little importance, because of their short duration and high fluctuations in the prices of stocks.

**(B) The Average Discount everything**

The stock prices reflect all possible information, private and public. Any surprise news will be reflected in the stock price, commodity price, and stock index very quickly. The share prices that are determined in the market evolve out of a discounting process that takes all known and predictable factors into account.

**(C) Price Action Determines the Trend**

In a bull market the peak of successive rallies should increase and also the trough of the secondary movements should increase too. It means we will see higher highs and higher lows in a bull market. The reverse is correct in a bear market; we should see lower lows and lower highs in a bear market.

**(D) Line Indicate Movements**

Sometimes the secondary movement is horizontal, and this is called line. It should last for few weeks. In a bull market, line formation implies smart money is accumulating and in a bear market, line indicates distribution from strong hand to week hand.

**(E) Price/Volume Relationship Provide Background**

According to Dow theory, the main signals for buying and selling are based on the price movements of the indexes. Volume is also used as a secondary indicator to help confirm what the price movement is suggesting. From this tenet it follows that volume should increase when the price moves in the direction of the trend and decrease when the price moves in the opposite direction of the trend.

Generally volume should go with the trend and we have the following relationship between volume and price:

## Table : 11.3

## Relationship between Volume and Price

| Price | Volume | Interpretation |
|---|---|---|
| Rising | Up | Volume confirms price rise, bullish |
| Rising | Down | Volume indicate weak rally, correction or reversal is possible. Bearish |
| Declining | Up | Volume confirms price fall, bearish |
| Declining | Down | Volume indicate weak price decline, consolidation or reversal |

**(F) The Averages Must Confirm**

The market is truly a barometer of future business conditions. The industry averages and market averages should by and large move together.

## Activity B :

1. Technical analysis is based on Dow Jones Theory. Elucidate?

### 11.5.1 Price vs. Volume Change

Technical anlaysis believe that price and volume are closely related. There are four rules:-

(a) A rising index with an increasing volume will indicate a bullish market and a 'buy' signal as it reflects unsatisfied demand in the market.
(b) A falling index with decreasing volume shows a bullish signal.
(c) When volume tends to increase during index declines, it is a bearish signal.
(d) When volume tends to decrease as the index rises, it is a bearish signal.

### 11.5.2 Advance-Decline Line

**The rules are as follows :-**

(a) A rising NSE index (NIFTY) with a falling advance-decline line indicates that in spite of a rise in about 50 blue chips in the NSE index, many small stocks are beginning to turn down. This is an indication of a weakening market and gives a bearish signal.

(b) A fall of NSE index with a rising advance decline line gives a bullish signal.

(c) Technical analysts also believe that when the cumulative number of advance exceeds declines by 2000 over a ten day period, the market may be "overbought" & vice versa.

### 11.5.3 New High & New low indicator

A rising market should normally view an expanding number of stocks hitting new high prices & decreasing new low prices Conversely, a declining market is usually accompanied by an increasing number of new lows and decreasing number of new highs.

### 11.5.4 Charting

The basic tool in technical analysis is movement in prices, measured by charts. There are four main types of charts that are used by investors and traders depending on the information that they are seeking and their individual skill levels. The chart types are: the line chart, the bar chart, the candlestick chart and the point and figure chart.

**a) Line Chart :** The most basic of the four charts is the line chart because it represents only the closing prices over a set period of time. The line is formed by connecting the closing prices over the time frame. The charts are easily drawn and widely used in technical analysis.

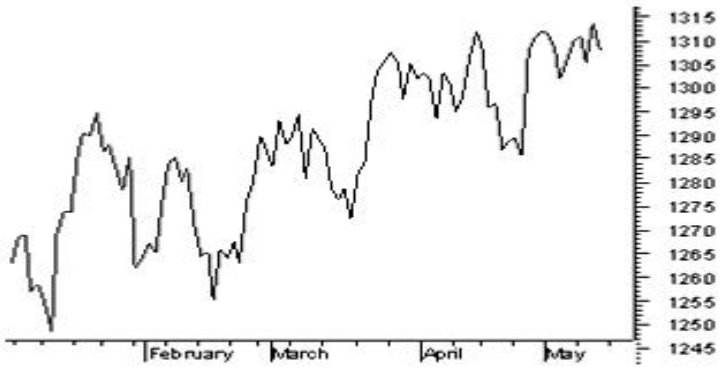


**Fig.11.5 Line Chart**

The price is marked on the Y-axis and the period of time on the X-axis. Line charts are helpful in easily identifying price patterns. Line charts do not provide visual information of the trading range for the individual points such as the high, low and opening prices. However, the closing price is often considered to be the most important price in stock data compared to the high and low for the day and this is why it is the only value used in line charts.

**b) Bar Charts:** The bar chart expands on the line chart by adding several more key pieces of information to each data point. The chart is made up of a series of vertical lines that represent each data point. This vertical line represents the high and low for the trading period, along with the closing price. The close and open are represented on the vertical line by a horizontal dash. The opening price on a bar chart is illustrated by the dash that is located on the left side of the vertical bar. Conversely, the close is represented by the dash on the right.

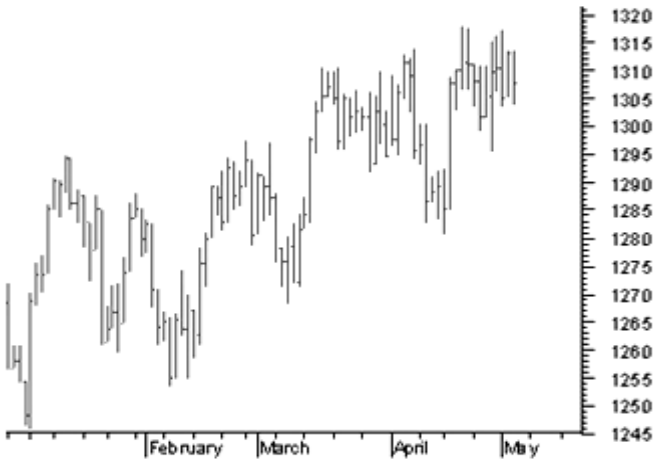


**Fig.11.6 Bar Chart**

Generally, if the left dash (open) is lower than the right dash (close) then the bar will be shaded black, representing an up period for the stock, which means it has gained value. A bar that is colored red signals that the stock has gone down in value over that period. When this is the case, the dash on the right (close) is lower than the dash on the left (open).

**c) Candlestick Charts :** The candlestick chart is similar to a bar chart, but it differs in the way that it is visually constructed. Similar to the bar chart, the candlestick also has a thin vertical line showing the period's trading range. The difference comes in the formation of a wide bar on the vertical line, which illustrates the difference between the open and close. And, like bar charts, candlesticks also rely heavily on the use of colors to explain what has happened during the trading period. A major problem with the candlestick color configuration, there are two color constructs for days up and one for days that the price falls.

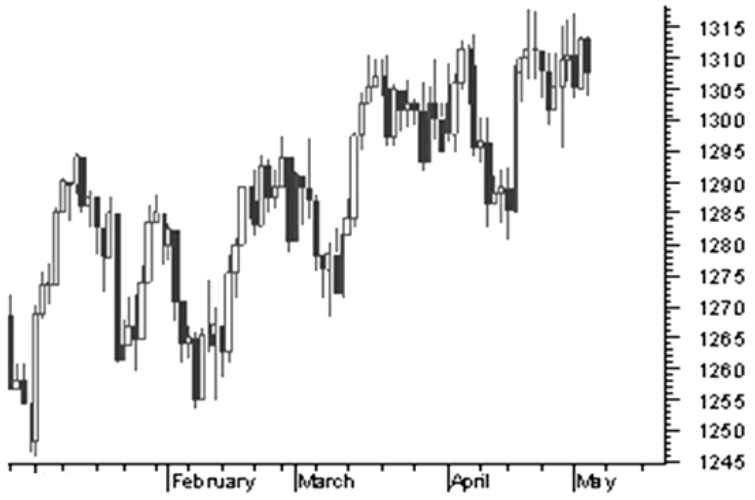


**Fig.11.7 Candelstick Chart**

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

**d) Point and Figure Chart :** Though the point and figure chart (PFC) is not as commonly used as the other two charts. PFC's does not include volume or time. Construction of PFC involves the use of two symbols 'X' and 'O' while 'X' indicated increase in prices, 'O' indicates downward movement.PFC's are plotted on cross-section paper that has arithmetically ruled squares. Suppose that a 1-point PFC is to be plotted. The graph may begin by recording the price at a chosen level. Across the price levels marked on the Y-axis, either 'X' or 'O' is marked for the beginning price.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 18 | | | | | | X | | X | | | |
| 17 | | | | X | | X | O | X | O | | |
| 16 | | | | X | O | X | O | X | O | | |
| 15 | O | X | | X | O | X | O | X | O | X | |
| 14 | O | X | O | X | O | | O | X | O | X | O | X | |
| 13 | O | X | O | X | | | O | | O | X | O | X | O |
| 12 | O | X | O | | | | | | O | X | O | X | O |
| 11 | O | X | | | | | | | O | | O | | O |
| 10 | O | | | | | | | | | | | | |

**Fig.11.8 Point and Figure Chart**

Subsequent change in price level is noted. If the price increases, for every increase equal to, or over Rs.1, an 'X' is marked on the same column if the chart began with an 'X' mark for the beginning price level. A decrease in price equal to or above Rs. 1 is treated as a change in direction. The chartist shifts to the next column and marks a series of '0's indicate the magnitude of fail m prices. No marking is made if prices remain at the same level or it changes are less than Rs.1. Prices are marked in the same column irrespective of the time period, as long as the direction of change remains unaltered.

## Activity C :

1. Write a note on charting as a technical tool. Explain in brief different types of charts.

### 11.5.5 Price Pattern

Share prices do not always switch from a bullish phase to a bearish phase, or vice-versa almost overnight. The transitional period which lies in between the two trends, throws up indications as to the direction of price change: The concept of price patterns is based on the invariable occurrence of a transitional phase; which shows up as• an intermediate trend, in between two major trends.

According to the technical analysis, the transitional phase is marked by clearly discernable price patterns which signal (a) The end of a bull/ bear market, (b) The reversal in trend, (c) The magnitude and direction of the new trend and (d) Confirmation of the new trend.

**(a) Support & Resistance levels:** A support level is a barrier to price decline, a resistance level is a barrier to price advancement. A stock breaking its support level is technically weak, conversely a stock breaking the resistance, level is technically strong.

This can be explained numerically say, for example, if a scrip price moves around Rs. 350 for some weeks, then it may rise and reach Rs. 450. At this point the price halts and then falls back. The scrip keeps on falling back to around its original price Rs. 350 and halts. Then it moves upward. In this case Rs. 450 becomes the support level. At this point, the scrip is cheap and investors buy it and demand makes the price move upward. Whereas Rs. 450 becomes the resistance level, the price is high and there would be selling pressure resulting in the decline of the price.

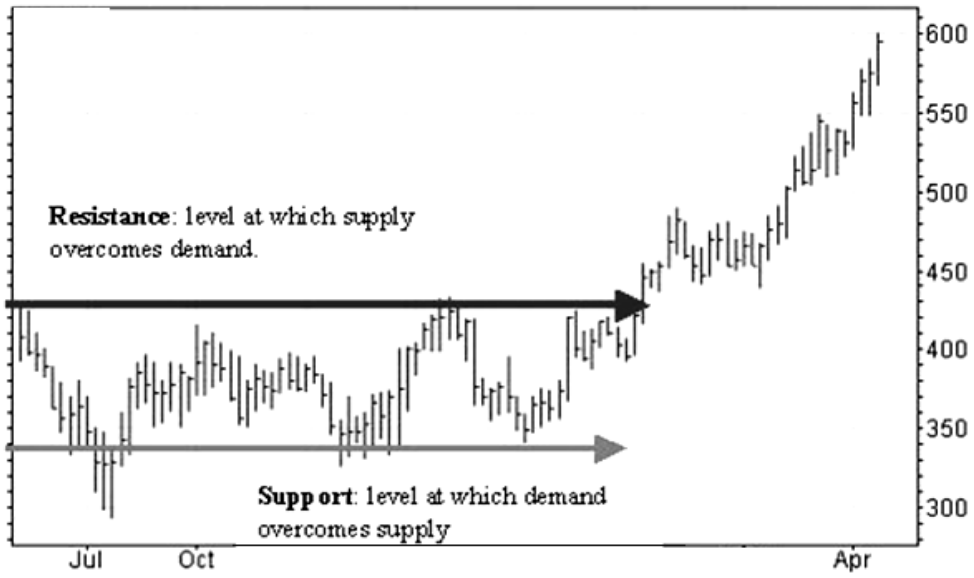


**Fig.11.9 Support and Resistance Level Chart**

If the scrip price reverses the support level and moves downward, it means that the selling pressure has overcome the potential buying pressure, signaling the possibility of a further fall in the value of the scrip. It indicates the violation of the support level and bearish Market.

If the scrip penetrates the previous top and moves above, it is the violation of resistance level. At this point, buying pressure would be more than the selling pressure. If the scrip was to move above the double top or triple top formation, it indicates bullish market.

**(b) Head & Shoulders:** This is the most important pattern to indicate a reversal of a price trend. As seen, head & shoulders has four basic elements:-

(i) A strong rally (i.e. upward advance) on which trading volume becomes very heavy followed by a minor reaction (i.e. decline) on which volume runs considerably less. Thus left shoulder is formed.

(ii) The other rally follows which takes the peak at a higher level than the left shoulder once again due to reaction, prices fall below the top level of the left shoulder as trading activity declines. The creates the lead.

(iii) Subsequently, a moderate rally in the volume of shares traded lifts the price somewhat but fails to push it as high as the top of the head before once again decline sets in. Thus the right shoulder is formed.

(iv) Finally, the price movement falls below the neckline (Which is the line joining the two points where the head & shoulder meet) which indicates a reversal. This is called confirmation or breakout. The drop in price is expected to be equal to the distance between the top of the head & the neckline. Thus a breakout indicates emergence of a bearish market.

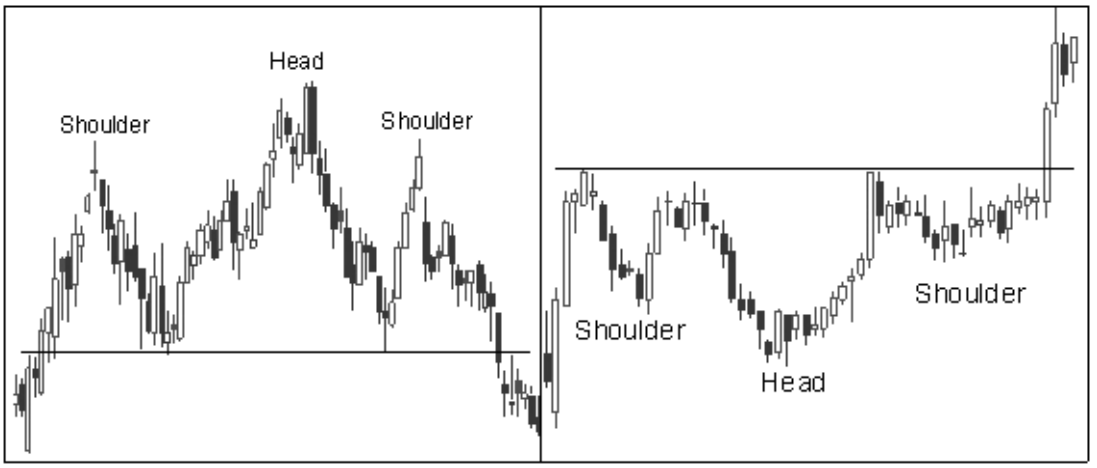


**Fig.11.10 Head and Shoulder chart**

**Inverted Head & Shoulders:** An inverted head & shoulders formation looks like an upside own head and shoulders formation. If there is a breakout (i.e., the price cuts the neckline after the second inverted shoulder is formed) it indicates a bullish market and signal to buy.

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

(a) **Double Top and Bottom:** This type of formation signals the end of one trend and the beginning of another. If the double top is formed when a stock price rises to a certain level, falls rapidly, again stock price rises to a certain level, falls rapidly, again rises to the same height or more, and turns down. Its pattern resembles the letter 'M'. The double top may indicate the onset of the bear market. But the results should be confirmed with volume and trend. In a double bottom, the price of the stock falls to a certain level and increase with diminishing activity. Then it falls again to the same or to a lower price and turns up to a higher level. The double bottom resembles the letter ‘W’. Technical analysis view double bottom as a sign for bull market.

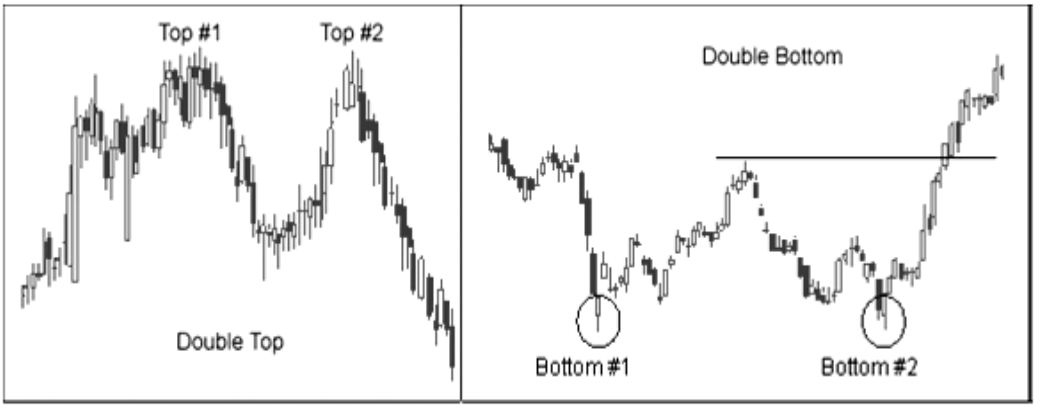


**Fig.11.11 Double Top and Bottom Chart**

**(b) Triple Tops and Bottoms:** Triple tops and triple bottoms are another type of reversal chart pattern in chart analysis. These are not as prevalent in charts as head and shoulders and double tops and bottoms, but they act in a similar fashion. These two chart patterns are formed when the price movement tests a level of support or resistance three times and is unable to break through; this signals a reversal of the prior trend. Confusion can form with triple tops and bottoms during the formation of the pattern because they can look similar to other chart patterns. After the first two support/resistance tests are formed in the price movement, the pattern will look like a double top or bottom, which could lead a chartist to enter a reversal position too soon.

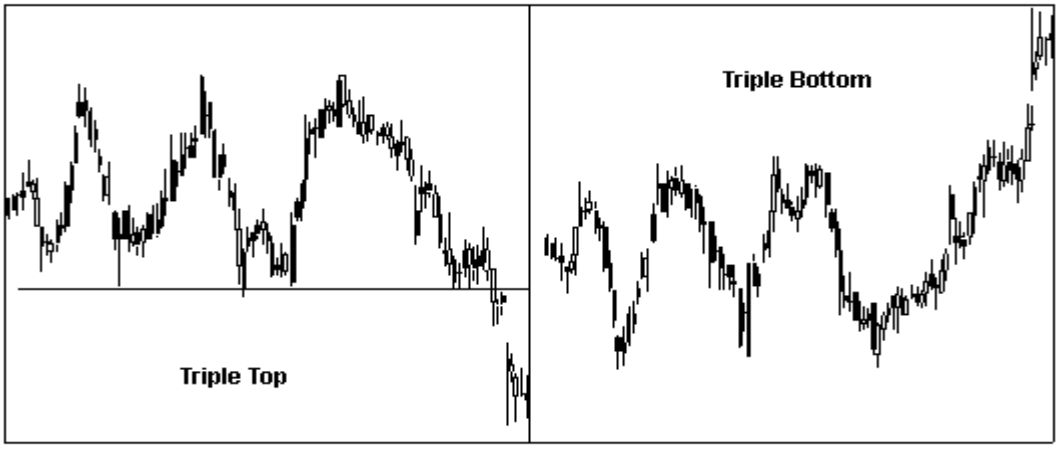


**Fig.11.12 Triple Top and Bottom Chart**

**(f) Triangle formation:** There are two types of triangle formation-Symmetrical and Right angled. The symmetrical triangle is a pattern in which two trendlines converge toward each other. A symmetrical triangle is formed when in a series of rallies, each

succeeding one peaks at a lower level than the preceding peaks and the bottoms of the intervening relations is progressively higher.

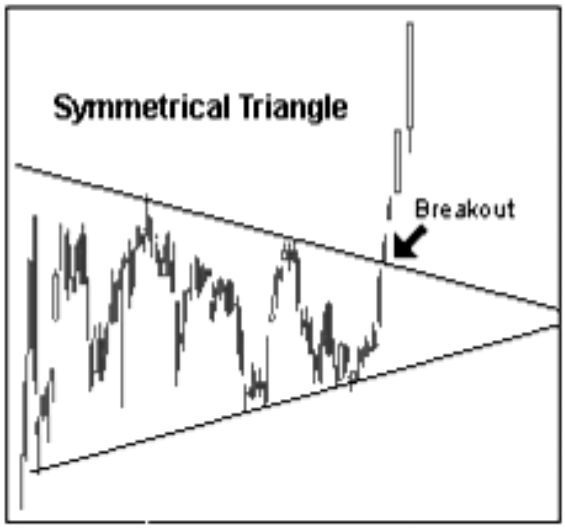


**Fig.11.13 Symmetrical Triangle chart**

This pattern is neutral in that a breakout to the upside or downside is a confirmation of a trend in that direction. When price break out of a symmetrical triangle, the reversal is generally sharp. Volume reduces as the triangle narrows towards the apex. A right angles triangle is also formed when a series of rallies coverage, but with an important difference one of the two boundaries of the series is horizontal to the X axis.

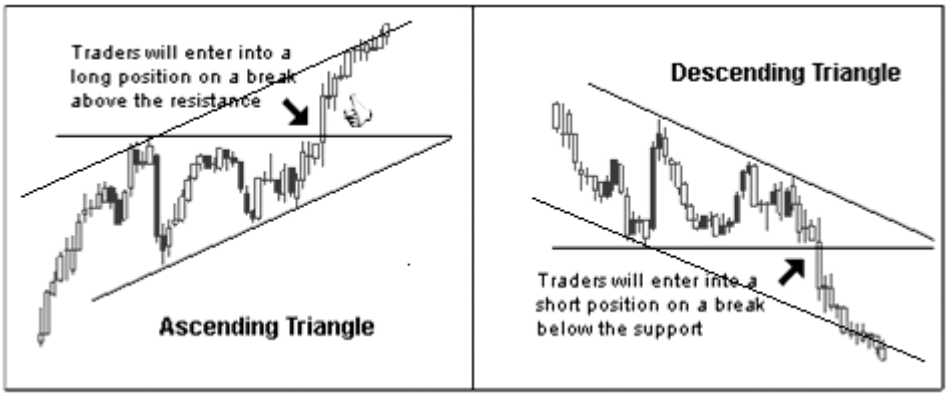


**Fig.11.14 Right Angle Triangle Chart**

In an ascending triangle, the upper trend line is flat, while the bottom trend line is upward sloping. This is generally thought of as a bullish pattern in which chartists look for an upside breakout. In a descending triangle, the lower trend line is flat and the upper trend line is descending. This is generally seen as a bearish pattern where chartists look

for a downside breakout. The validity of the breakout is measured by drawing a line parallel to the sloping side of triangle.

**(g) Rectangles:** A rectangle is an important consolidation pattern, which can be formed either during an uptrend• or in the course of a downtrend in prices. A series of minor raffles and reactions, which have almost identical peaks and troughs signal the formation of a rectangle. A rectangle indicates equal pressure being exercised by

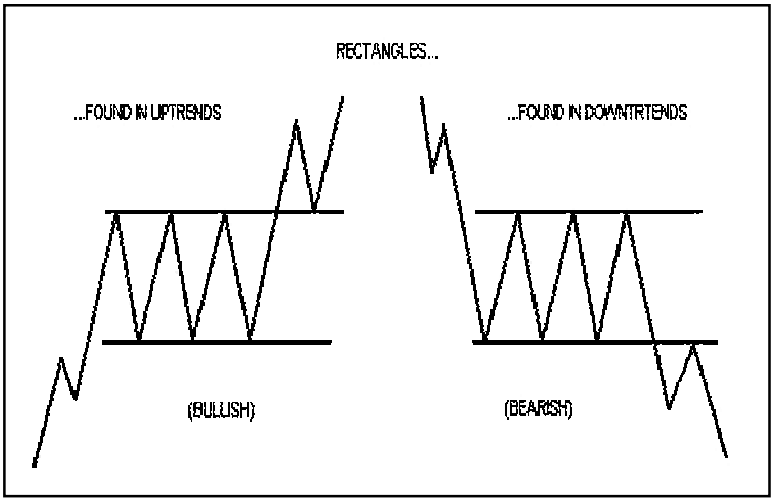


**Fig.11.15 Rectangle Chart**

buyers and sellers, and they are indecision areas that are usually resolved in the direction of the trend until a breakout occurs. The price line may breakout on either side. A rectangle therefore may be a consolidation pattern or result in reversal.

**(h) Flags & Pennants:–** Formations commonly known as flags & pennants often appear after a swift upward movement of prices followed by a generally sideways price movement.


**Fig.11.16 Pennant and Flag chart**

This pattern is then completed upon another sharp price movement in the same direction as the move that started the trend. A series of flags in a rising market shows that the market may not come down sharply & vice-versa. There is little difference between a pennant and a flag. The main difference between these price movements can be seen in the middle section of the chart pattern. In a pennant, the middle section is characterized by converging trend lines, much like what is seen in a symmetrical triangle. The middle section on the flag pattern, on the other hand, shows a channel pattern, with no convergence between the trend lines. In both cases, the trend is expected to continue when the price moves above the upper trend line.

**(i) Saucers and Rounding Tops:** A saucer generally occurs at market bottoms when investor interest in the share is at its lowest, ebb. The lows reached at the end of the market are all formed by reactions that are small, and rallies are not marked enough due to lack of enthusiasm.

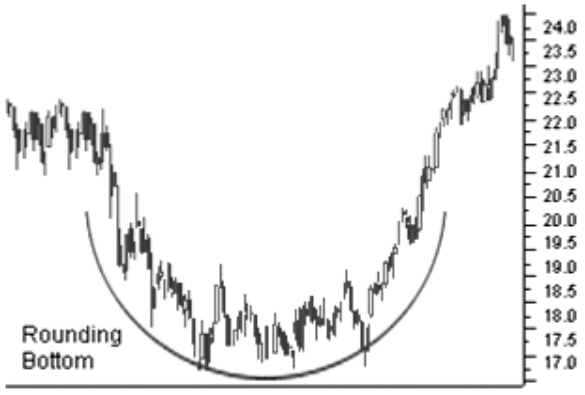


**Fig.11.17 Rounding Bottom chart**

A rounding top is exactly opposite to a saucer, but volume characteristics are same for both the patterns A rounding top is formed to indicate a slow change in the demand supply balance, and is an important reversal pattern.

**(g) Gaps:** A gap in a chart is an empty space between a trading period and the following trading period. This occurs when there is a large difference in prices between two sequential trading periods. Gaps indicate enthusiastic buying or selling and serve as a very powerful trend-validating tool. Gaps are typically seen on daily bar graphs and are very rare in weekly and monthly charts. That is because gaps are usually "filled" when the price comes back and retraces the whole range of the gap. **There are the rare circumstances when the gap will not be filled. There are three main types of gaps, breakaway, runaway (measuring) and exhaustion.**

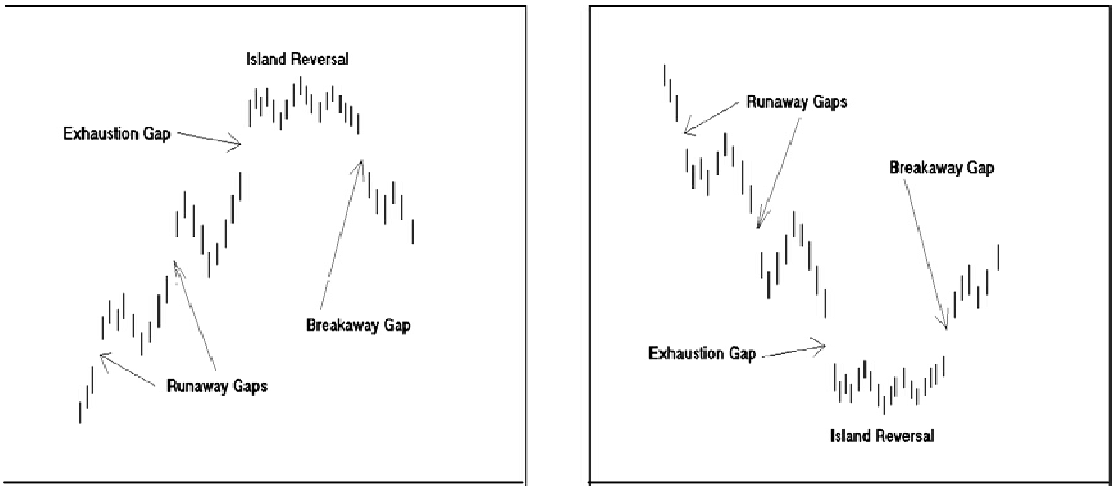


**Fig.11.18 Gaps chart**

### i) Breakaway Gaps

Breakaway gaps typically come about at the beginning of the trend. They are usually seen following intermediate- to longer-term reversal patterns and serve to signal a rush to buy or sell a security. The types of gaps that occasionally are not filled are most often breakaway gaps.

### ii) Runaway or Continuation Gaps

Runaway gaps usually show up after the trend has been established. They typically come about in rapid advancing (or declining) markets where investor optimism (or pessimism) is running high. Also known as measuring gaps, they usually mark the midpoint between the previous breakout and the ultimate target of the move. They are typically filled in a matter of a few days, and those that aren't usually are filled sometime later during larger corrective phases. Most often, there is only one runaway gap, and it usually denotes the prevailing trend's midpoint. There are times, though, that more than one runaway gap develops. They certainly serve to bolster the short-term strength of the move, but the more runaway gaps there are, the more suspect the duration of the move becomes.

### iii) Exhaustion Gaps

When exhaustion gaps develop, they tend to signal the ending phase of the prevailing trend. The most reliable way of distinguishing an exhaustion gap from just another runaway gap is by its volume. The volume associated with exhaustion gaps is usually significantly larger than that related to previous gaps. Exhaustion gaps do not, of

themselves, indicate a trend reversal. They only serve as a warning that a significant trend change might be developing.

(k) **Island Reversals**

Islands are compact trading ranges that usually follow a fast rally or decline. They are separated from the previous move by an exhaustion gap, and from the move in the opposite direction which follows by a breakaway gap. The resulting formation is an island of prices, detached from the rest of the price pattern by a gap on either end. Sometimes the island contains only one day and is called a one-day reversal. The two gaps often occur at approximately the same price level. Island reversals do not usually carry long-term implications, but they can be very powerful short and intermediate term trading signals. An island will usually send prices back for a complete retracement of the move that preceded it.

**(l) Relative Strength:**

The empirical evidence Shows that certain stocks perform better than other stocks in a given market environment and that this behavior will remain relatively constant over time. This approach is based on a belief that a share or sector which is outperforming the market will probably continue to do so. It embodies the 'momentum idea' or band wagon effect'. It may also reflect the-gradual dissemination of good or bad news to a progressively wider investing public. The technical analyst using the relative strength approach have observed that those firms and industries displaying greatest relative strength in good markets (bull) also show the greatest weakness in bad markets (bear). These 'relatively strong' firms will have high betas.

### 11.5.6 Moving Averages (MA)

The moving average is one of the most popular indicators and is used by technical analysts for a variety of tasks:

- to identify areas of short term support/resistance
- to determine the current trend
- as a component in many other indicators such as the MACD, or Bollinger bands.

The main advantages of moving averages is firstly that they smooth the data and thus provide a clearer visual picture of the current trend and secondly, that moving average signals can give a precise answer as to what the trend is. The main disadvantage is that they are lagging rather than leading indicators.

There are two main forms of moving average:

The **simple moving average** (as the name suggests) calculates the average price over a specified moving time period. For example, a 20 day simple moving average will

calculate the average mean price from the last twenty days closing prices and so on. Generally 50 day and 200 day SMA is used in predicting future prices.

The **exponential moving average ("ema")** also averages the last x days closes but assigns a greater weight to the more recent prices making it more sensitive to current price action and thus reducing the lag effect.

### 11.5.7 Spreads

Large spreads between yields indicate low confidence and are bearish; the market appears to require a large compensation for business, financial and inflation risks. Small spreads indicate high confidence and are bullish In short, the larger the spreads, the lower the ratio and the less the confidence. The smaller the spreads, the greater the ratio, indicating greater confidence.

### 11.5.8 Market Breadth Index

Market Breadth is a comparison of advancing stocks versus declining stocks. Positive breadth indicates that more stocks are advancing than declining. Negative breadth indicates that more stocks are declining than advancing. Breadth can also be thought of as a measure of momentum for groups of stocks. The figure of each week is added to previous week's figure. These data are then plotted to establish the pattern of movement of advance and declines. The purpose of the market breadth index is to indicate whether a confirmation of some index has occurred. If both the stock index and the market breadth index increase, the market is bullish; when the stock index increase but the breadth index does not, the market is bearish.

## Activity D :

1. What do you mean by exponential moving average.

## Activity E :

1. Explain Head and Shoulder and triangle chart patterns.

## 11.6 Criticisms of Technical Analysis

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

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

**(iii) Unreliable changes:** Changes in market behaviour observed and studied by technical analyst may not always be reliable owing to ignorance or intelligence or manipulative tendencies of some participants.

A false piece of information or wrong judgment may result in trade at a lower than market price. If the technicians fail to wait for confirmation, they incur losses.

The market prices of shares are sometimes the results of certain unhealthy practices like cornering and rigging of certain shares by some-stock market operators.

**(iv) Changes are not predictable:-**Technicians expect changes to take place in a known and gradual fashion.

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

**(b) No gradual shifts:** It is presumed that shifts in supply and demand occur gradually rather than instantaneously. Since these shifts are expected to continue as the price gradually reacts to new or other factors the price change pattern is extrapolated to. predict further price changes. However, economists asserted that this is a wrong proposition.

**(v) Tools are not precise:** The greatest limitation of technical analysis is perhaps the mechanical precision it gives to the entire exercise of investment in equity shares. However, the tools are subject to errors, breakdown and misinterpretation.

**(vi) False signals can occur:** Technical analysis is a signaling device. Like a thermometer, it may give a false indication when there is no alarm, but when there is cause for alarm, the signal will almost invariably be flashed.

The hub of the problem as it applies to indicators is that while they may be crystal clear in definition and theory, they often break down in practice. Each one of them has at some particular time been ineffective, out-weighed by a number of other indicators.

Investing wisely is an important part of financial security. One tries to invest money as early as possible so that the money will grow accordingly in his/her lifetime. Choosing a wise investing option is very crucial because a balance is required to be maintained between the risks and returns involved.

For example, many people invest in private firms which offer very high interest rate but they may vanish after some time losing all the invested money.

## 11.7 Summary

This chapter analyses the behavior of stock prices through the technical analysts view point. Technical analysis is the study of financial market action. The technical analysis is done from four important aspects namely, price, time, volume and market breadth. The Dow theory is one of the oldest methods of identifying trends. The technician looks at price changes that occur on a day-to-day or week-to-week basis or over any other constant time period displayed in graphic form, called charts. The analyst uses Line chart, bar chart, candlestick chart and point and Figure chart. A chartist analyzes price charts only, while the technical analyst studies technical indicators derived from price changes in addition to the price charts. Technical analysts examine the price action of the financial markets instead of the fundamental factors that affect market prices. They have large number of patterns which predict the upward and downward movement in the market. The technical analyst believes that all the relevant market information is reflected or discounted in the price with the exception of shocking news such as natural disasters or acts of God. These factors, however, are discounted very quickly. Watching financial markets, it becomes obvious that there are trends, momentum and patterns that repeat over time, not exactly the same way but similar.

## 11.8 Self Assessment Questions

1. How is technical analysis different from fundamental analysis?
2. What are charts? How are they interpreted in technical analysis?
3. Explain the nature and methodology of trend analysis. What is the primary difference between 'line chart' and 'bar chart'?
4. What are the criticisms of technical analysis?
5. What are the tools of technical analysis? Explain in detail.

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# Unit – 12 Portfolio Analysis

## Structure of Units



## 12.0 Objectives

After completing this unit, you would be able to:

- Understand the concept of portfolio.
- Understand the meaning of portfolio management.
- Need and objectives of portfolio management.
- Understand the investment strategy.
- Learn about the concept of risk.
- Understand the risk and its various types in portfolio management.
- You will be able to explain the meaning of ' Risk Diversification'.

## 12.1 Introduction

### 12.1.1 What is Portfolio?

Portfolio means a collection of financial assets such as stocks, bonds, debt instruments, mutual fund and cash equivalents etc. A portfolio is planned to stabilize the risk of non-performance of various investment alternatives as they are held directly by investors and managed by financial professionals.

Risk preference is tendency to choose a risky or less risky option. Utility function or indifference curves are used to represent someone's preferences. A risk averse decision maker always turns down fair gambles and has a concave utility function. A risk neutral decision maker is always indifferent to accepting fair gambles and has a linear utility function. A risk tolerant/risk seeking decision maker always accepts fair gambles and has a convex utility function.

**Table 12.1**
**Definition**

| Term | Definition |
|---|---|
| Risk averse | Uncomfortable with uncertainty, desire to avoid or reduce threats and exploit opportunities to remove uncertainty. Would be unhappy with an uncertain outcome. |
| Risk seeking | Comfortable with uncertainty, no desire to avoid or reduce threats or to exploit opportunities to remove uncertainty. Would be happy with an uncertain outcome. |
| Risk tolerant | Tolerant of uncertainty, no strong desire to respond to threats or opportunities in any way. Could tolerate an uncertain outcome if necessary. |
| Risk neutral | Uncomfortable with uncertainty in the long term so prepared to take whatever short term actions are necessary to deliver a certain long term outcome. |

### 12.1.2 What is Portfolio Management?

The modern portfolio theory assumes that the investors are risk averse. This means that given a choice between two assets with equal expected rates of return, risk averse investors will select the asset with the lower level of risk. It also means that a riskier investment has to offer a higher expected return or else nobody will buy it.

For example, Consider Mr. Mahesh has 100,000 and wants to invest his money in the financial market other than real estate investments. Here, the rational objective of the investor (Mr. Mahesh) is to earn a considerable rate of return with less possible risk.

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**Table 12.2**

**Ideal Recommended portfolio for Mr. Mahesh**

| S.No. | Investor's Portfolio | Investment | Percentage | Security | Returns |
|---|---|---|---|---|---|
| 1 | Government Bonds | 25,000 | 25% | High | Low |
| 2 | Bank Fixed Deposits | 15,000 | 15% | High | Average |
| 3 | Shares | 35,000 | 35% | Low | High |
| 4 | Mutual Funds | 25,000 | 25% | Average | Average |

***Note: This is just an example and may not be taken as the standard of the portfolio management.***

Thus an investor will take on increased risk only if he is compensated by higher expected returns. Conversely, an investor who wants higher returns must accept more risk. The exact tradeoff between risk and reward differs across investors and is based on individual risk aversion characteristics. The implication of risk aversion is that a rational investor will not invest in a portfolio if a second portfolio exists which has a more favorable risk return profile i.e. if for that level of risk an alternative portfolio exists which has better expected returns.

The modern portfolio theory further assumes that only the expected return and the volatility of return matter to the investor. The investor is indifferent to other characteristics of the distribution of returns, such as its skewness. Thus, portfolio management deals with finding an efficient portfolio that maximizes the rate of return for a given level of risk. The return is the weighted return of the securities held in the portfolio. The risk of the portfolio is represented by the standard deviation of return of the portfolio.

### 12.1.3 Need for Portfolio Management

a) Portfolio management presents the **best investment plan** to the individuals as per their income, budget, age and ability to undertake risks.
b) Portfolio management **minimizes the risks** involved in investing and also increases the chance of making profits.
c) Portfolio managers understand the client's financial needs and suggest the best and unique investment policy for them with minimum risks involved.
d) Portfolio management enables the portfolio managers to provide customized investment solutions to clients as per their needs and requirements.

### 12.1.4 Objectives of Portfolio Management

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

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

c) **Capital Growth**: Portfolio management guarantees the growth of capital by reinvesting in growth securities or by the purchase of the growth securities. A portfolio shall appreciate in value, in order to safeguard the investor from any erosion in

purchasing power due to inflation and other economic factors. A portfolio must consist of those investments, which tend to appreciate in real value after adjusting for inflation.

d) **Marketability**: Portfolio management ensures the flexibility to the investment portfolio. A portfolio consists of such investment, which can be marketed and traded. Suppose, if your portfolio contains too many unlisted or inactive shares, then there would be problems to do trading like switching from one investment to another. It is always recommended to invest only in those shares and securities which are listed on major stock exchanges, and also, which are actively traded.

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

f) **Diversification of Portfolio**: Portfolio is purposely designed to reduce the risk of loss of capital and/or income by investing in different types of securities available in a wide range of industries.

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

### 12.1.5 Scope of Portfolio Management

Portfolio Management is a continuous process. It is a dynamic activity. The following are the basic operations of a portfolio:

a) Identification of investor's objective, constraints and preferences.
b) Monitoring the performance of portfolio by incorporating the latest market conditions.
c) Making an evaluation of portfolio income (comparison with targets and achievement)
d) Making revision in the portfolio.
e) Implementation of the strategies in tune with investment objectives.

In India, Portfolio Management is still in its infancy. Barring a few Indian banks, and foreign banks and UTI, no other agency had professional Portfolio management until 1987. After the success of Mutual Funds in Portfolio Management, a number of brokers and Investment Consultants some of whom are also professionally qualified have become Portfolio Managers. They have managed the funds of clients on both discretionary and nondiscretionary basis. It was found that many of them, including Mutual Funds, have guaranteed a minimum return or capital appreciation and adopted all

kinds of incentives which are now prohibited by SEBI. They resorted to speculative over trading and insider trading, discounts, etc., to achieve their targeted returns to the clients, which are also prohibited by SEBI.

The SEBI has imposed strict rules for portfolio managers, which include their registration, a code of conduct and minimum infrastructure, experience and expertise etc. It is no longer possible for any unemployed youth, or retired person or self-styled consultant to engage in Portfolio management without the SEBI's license. The guidelines of SEBI are in the direction of making Portfolio Management a responsible professional service to be rendered by experts in the field.

**Basically Portfolio Management involves**

a) A proper investment decision-making of what to buy and sell
b) Proper money management in terms of investment in a basket of assets so as to satisfy the asset preferences of investors.
c) Reduce the risk and increase returns.

## 12.2 Investment Strategy

In India, there are a large number of people who save their money, barring the population who are below the poverty line. In a poor country like this, it is surprising that its saving rate is as high as 27% of GDP per annum and investment rate is at 28% of GDP. But the return in the form of output growth is as low as 5 to 7% per annum. One may ask why it is that high level of investment could not generate comparable rates of growth of output. The answer is poor investment strategy, which involves, high capital output ratios, low productivity of capital and high rates of obsolescence of capital. What is true of the nation at that Macro level is also true at Micro level of individuals and institutions. The use of capital in India is wasteful and inefficient, despite the Fact that India is labor rich and capital poor. Thus, the Portfolio Managers in India lack the expertise and experience, which will enable them to have proper strategy for investment management.

Secondly, the average Indian Household saves around 60% in financial form and 40% in physical form. Of those in financial forms, nearly 42% is held in cash and bank deposits, as per the latest RBI data and they have negative real returns or return less than the inflation rates. Besides, a proportion of 35% of financial savings is held in form of Insurance, P.F., and Pension

Funds etc., while another l2% is in government instruments and Certificates like Post Office Deposits, N.S. Certificates, Public Provident Funds, National Saving Scheme etc. The real returns on Insurance, P.F., etc., are low and many times lower than the average inflation rates. With the removal of many tax concessions for investments in Post Office

Savings instruments, Certificates, etc., they have also become less attractive to small and medium investors. The only investments, satisfying all their objectives are capital market instruments. These objectives are higher income, capital appreciation, safety, marketability, liquidity and hedge against inflation. All these objectives can be fulfilled by planned investment in capital markets which are professionally managed and monitored. Portfolio management is an answer to all such requirements.

## 12.3 The Concept of Risk and Diversification

### 12.3.1 What Is Risk?

Risk is defined as the chance that an investment's actual return will be different than expected. This includes the possibility of losing some or all of the original investment. When investing in stocks, bonds, or any investment instrument, there is a lot more risk than you'd think. In the next section, we'll take a look at the different kind of risk that often threatens investors' returns.

### 12.3.2 Different Types of Risk

a) **Systematic Risk** - Systematic risk influences a large number of assets. It affects the entire market. A significant political event, for example, could affect several of the assets in your portfolio. It is virtually impossible to protect yourself against this type of risk.

b) **Unsystematic Risk** - Unsystematic risk is sometimes referred to as "specific risk". This kind of risk affects a very small number of assets. An example is news that affects a specific stock such as a sudden strike by employees. Diversification is the only way to protect you from unsystematic risk.

Now that we've determined the fundamental types of risk, let's look at more specific types of risk, particularly when we talk about stocks and bonds.

c) **Credit or Default Risk** - Credit risk is the risk that a company or individual will be unable to pay the contractual interest or principal on its debt obligations. This type of risk is of particular concern to investors who hold bonds in their portfolios. Government bonds, especially those issued by the federal government, have the least amount of default risk and the lowest returns, while corporate bonds tend to have the highest amount of default risk but also higher interest rates. Bonds with a lower chance of default are considered to be investment grade, while bonds with higher chances are considered to be junk bonds.

d) **Country Risk** - Country risk refers to the risk that a country won't be able to honor its financial commitments. When a country defaults on its obligations, this can harm the performance of all other financial instruments in that country as well as other countries it has relations with. Country risk applies to stocks, bonds, mutual funds, options and futures that are issued within a particular country. This type of risk is most often seen in emerging markets or countries that have a severe deficit.

e) **Foreign-Exchange Risk** - When investing in foreign countries you must consider the fact that currency exchange rates can change the price of the asset as well. Foreign-exchange risk applies to all financial instruments that are in a currency other than your domestic currency. As an example, if you are a resident of America and invest in some Canadian stock in Canadian

dollars, even if the share value appreciates, you may lose money if the Canadian dollar depreciates in relation to the American dollar.

f) **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.

g) **Political Risk** - Political risk represents the financial risk that a country's government will suddenly change its policies. This is a major reason why developing countries lack foreign investment.

h) **Market Risk** - This is the most familiar of all risks. Also referred to as volatility, market risk is the day-to-day fluctuation in a stock's price. Market risk applies mainly to stocks and options. As a whole, stocks tend to perform well during a bull market and poorly during a bear market - volatility is not so much a cause but an effect of certain market forces. Volatility is a measure of risk because it refers to the behavior, or "temperament", of your investment rather than the reason for this behavior. Because market movement is the reason why people can make money from stocks, volatility is essential for returns, and the more unstable the investment the more chance there is that it will experience a dramatic change in either direction.

### 12.3.3 Relationship between risk and return

Investors are risk averse; i.e., given the same expected return, they will choose the investment for which that return is more certain. Therefore, investors demand a higher expected return for riskier assets. Note that a higher *expected* return does not guarantee a higher *realized* return. Because by definition returns on risky assets are uncertain, an investment may not earn its expected return.

## 12.4 Inputs to Portfolio Analysis

Portfolio analysis builds on the estimates of future return and risk of holding various combinations of assets. As we know individual assets have risk return characteristics of their own. Portfolios on the other hand, may or may not take on the aggregate characteristics of their individual parts. In this section, we will reflect on the assessment of return- risk attributes of individual assets and portfolios.

### 12.4.1 Return and risk characteristics of Individual Assets

For individual assets, the returns are measured in an intuitively logical way over the predetermined investment horizon (or holding period). For instance, the returns from investment in equity shares are measured over a single holding period(t) as follows:

$$Total\ Returns = {[Dividends + (Market\ Prices - 1)]}\Big/{(Market\ Prices - 1)}$$

Within a multi-period framework, one may even apply a discounting model to estimate returns. What an investment analyst always wishes to know is the forecasts of returns.

Any kind of variability in the aforesaid return is the risk associated with the individual asset. The measure of this variability is the standard deviation. Hence standard deviation is the measure of variability of returns or in other words it is the measure of risk for an individual asset.

**Risk and Beta**

Risk is of two types- systematic market related risk and unsystematic risk or company specific risk. The former cannot be eliminated but managed with the help of Beta (β), which is

Explained as follows:

$$\beta = \frac{\%\ \text{change of Scrip return}}{\%\ \text{change of Market return}}$$

If β = 1, the risk, of the company is the same as that of the market and if β > 1, the company's risk is more than the market risk. If β < 1, the reverse is the position.

### 12.4.2 Expected return and risk of a Portfolio.

The return on a portfolio of assets is simply a weighted average of the return on the individual assets. The weight applied to each return is the fraction of the portfolio invested in that asset. Thus

$$Rp = \sum_{i=1}^{n} XiRi$$

Where,

Rp is the expected return of the portfolio,

Xi is the proportion of the portfolio's initial fund invested in asset i,

Ri is the expected return of asset i; and

n is the number of assets in the portfolio.

**Activity A:**

Oliver's portfolio holds security A, which returned 12.0% and security B, which returned 15.0%. At the beginning of the year 70% was invested in security A and the remaining 30% was invested in security B. Calculate the return of Oliver's portfolio over the year.

Rp = (.6x12%)+(.3x15%) = 12.9%

**Activity B:**

Oliver's portfolio holds security A, which returned 12.0%, security B, which returned 15.0% and security C, which returned –5.0%. At the beginning of the year 45% was invested in security A, 25.0% in security B and the remaining 30% was invested in security C. Calculate the return of Oliver's portfolio over the year.

Rp = (.45x12%)+(.25x15%)+(.3x(-5%)) = 7.65%

### 12.4.3 Calculating Portfolio risk – Measurement of Co variance, Variance, Standard Deviation and Correlation Coefficient

While there may be different definitions of risk, one widely-used measure is called variance. Variance measures the variability of realized returns around an average level. The larger the variance, higher is the risk in the portfolio.

Variance is dependent on the way in which individual securities interact with each other. This interaction is known as covariance. Covariance essentially tells us whether or not two securities returns are correlated. Covariance measures by themselves do not provide an indication of the degree of correlation between two securities. As such, covariance is standardized by dividing covariance by the product of the standard deviation of two individual securities. This standardized measure is called the correlation coefficient.

$$\sigma_p^2 = \sum_{i=1}^{n} \sum_{j=1}^{n} X_{pi}\ X_j\ \sigma_{ij}$$

Here $\sigma_p^2$ is the Variance of portfolio and $\sigma_{ij}$ is the covariance of returns between asset i and asset.

The correlation coefficient represented by 'r' is calculated as below

$$r = \frac{Cov(i,j)}{\sigma_i \sigma_j}$$

The correlation coefficient simply rescales the covariance to facilitate comparison with corresponding values for other pairs of random variables.

Correlation is the covariance of security A and B divided by the product of the standard deviation of these two securities. It is a pure measure of the co-movement between the two securities and is bounded by –1 and +1.

a) A correlation of +1 means that the returns of the two securities always move in the same direction; they are perfectly positively correlated.

b) A correlation of zero means the two securities are uncorrelated and have no relationship to each other.
c) A correlation of –1 means the returns always move in the opposite direction and are negatively correlated.

Portfolio risk can be effectively diversified (reduced) by combining securities with returns that do not move in tandem with each other.

## 12.5 Managing Portfolio Risk

### 12.5.1 Diversification

Risk can be reduced through diversification. The risk of investing in a single risky security, such as a stock or corporate bond, is very high due to the company-specific risks. Any number of unfortunate events could impact the rate of return. In the worst possible case, the company could go bankrupt, and the investor could lose the entire value of the investment. Company-specific risk is generally referred to as unsystematic risk or non systematic risk. Other names are unique-risk, firm-specific risk, or diversifiable risk.

Unsystematic risk can be eliminated by holding a broad portfolio of risky assets; e.g., many different securities in many different industries. This is easy to accomplish by owning a total market stock or bond index fund. Unsystematic risk is risk that can be "diversified away."

The risk that remains after diversifying away unsystematic risk is systematic risk. Other names are market risk or non-diversifiable risk. A total stock or bond market fund has systematic risk. This is risk impacting an entire asset class, such as when rising real interest rates impact the entire bond market.

In an efficient market, assets with known systematic risks will be priced lower and thereby compensate investors through higher expected returns. This expected relationship only applies to systematic risks. There is no reward for incurring unsystematic risk, and investors may therefore seek broad diversification without reducing the expected return of their portfolio.

Most investment professionals agree that while it does not guarantee against a loss, diversification is the most important component to help you reach your long-range financial goals while minimizing your risk. However no matter how much diversification you do, it can never reduce risk down to zero.

What do you need to have a well diversified portfolio? There are three main things you should do to ensure that you are adequately diversified:

Your portfolio should be spread among many different investment vehicles such as cash, stocks, bonds, mutual funds, and perhaps even some real estate.

a) Your securities should vary in risk. You're not restricted to picking only blue chip stocks. In fact, the opposite is true. Picking different investments with different rates of return will ensure that large gains offset losses in other areas. Your securities

should vary by industry, minimizing unsystematic risk to small groups of companies.

b) Another question people always ask is how many stocks they should buy to reduce the risk of their portfolio. The portfolio theory tells us that after 10-12 diversified stocks, you are very close to optimal diversification. This doesn't mean buying 12 internet or tech stocks will give you optimal diversification. Instead, you need to buy stocks of different sizes from various industries.

### 12.5.2 Asset Allocation

After diversification, the next step in managing portfolio risk is asset allocation.

Asset allocation is the process of selecting an appropriate mixture of risk-free assets and risky assets. Optimally, the risky portion of the portfolio includes all risky assets; e.g., stocks, bonds, real estate, etc. A 30-day T-Bill is most commonly used to represent the risk-free asset.

Asset allocation is one of the most important decisions that investors can make. In other words, the importance of an investor's selection of individual securities is insignificant compared to the way the investor allocates their assets to stocks, bonds, and cash equivalents.

## 12.6 SEBI Guidelines for Portfolio Manager

It will thus be seen that Portfolio Management is an art and requires high degree of expertise. The merchant banker has been authorized to do Portfolio Management Services, if they belong to Categories I and II as licensed by the SEBI. This classification of merchant bankers was dropped in 1996 and only the category I merchant bankers is allowed to operate in India. Others who want to provide such services should have a minimum net worth of Rs. 50 lakhs and expertise, as laid down or changed from time-to-time by the SEBI and would have to register with the SEBI. The SEBI have set out the guidelines in this regard, in which the relations of the client vis-a-vis the Portfolio Manager and the respective rights and duties of both have been set out. The code of conduct for Portfolio Managers has been laid down by the SEBI. The job of Portfolio Manager in managing the client’s funds, either on discretionary or nondiscretionary basis has thus become challenging and difficult due to the multitude of obligations laid on his shoulders by the SEBI, in respect of their operations, accounts, audit etc. It is thus clear that Portfolio Management has become a complex and responsible job which requires an in-depth training and expertise. It is in this context that the regulations of SEBI on Portfolio Management become necessary so that the minimum qualifications and experience are also ensured for those who are registered with SEBI. Nobody can do Portfolio Management without SEBI registration and license.

The SEBI has given permission to Merchant Bankers to do Portfolio Management. As per the guidelines of September, 1991 a separate category of Portfolio Managers is also licensed by SEBI for which guidelines were given in January 1993. A code of conduct was also laid down for this category, as is the case with all categories of capital market players and intermediates.

### 12.6.1 Portfolio Management Service

As per the SEBI norms, it refers to professional services rendered for management of Portfolio of others, namely, clients or customers with the help of experts in Investment Advisory Services. Investment management on the other hand involves continuing relationship with client to manage investments with or without discretion for the client as per his requirements.

### 12.6.2 Who can be a Portfolio Manager?

Only those who are registered and pay the required license fee are eligible to operate as Portfolio Managers. An applicant for this purpose should have necessary infrastructure with minimum two professionally qualified persons with experience in this business and a minimum net worth of Rs. 50 lakhs. The Certificate once granted is valid for three years. Fees payable for registration are Rs. 2.5 lakhs every year for two years and Rs. 1 lakh for the third year. From the fourth year onwards, renewal fees per annum are Rs. 75,000. These are subject to changes by the SEBI.

The SEBI has imposed a number of obligations and a code of conduct on them. The Portfolio Manager should have a high standard of integrity, honesty and should not have been convicted of any economic offence. He should not resort to rigging up of prices, insider trading or creating false markets etc. Their books of accounts are subject to inspection and audit by SEBI. The observance of the code of conduct and guidelines given by the SEBI are subject to inspection and penalties for violation are imposed. The Manager has to submit periodical returns and documents as may be required by the SEBI from time-to-time.

## 12.7 Summary

Portfolio analysis is a process used to assess the suitability of a portfolio of securities relative to its expected investment return and its correlation to the risk tolerance of an investor seeping the optimal tradeoff between risk and return. An analysis conducted at regular intervals enables the investor to make the necessary adjustments in the portfolio's allocation of afferent investment classes according to changing market conditions or changes in his own circumstances.

## 12.8 Self Assessment Questions

1. What is portfolio management?
2. Explain the Need and scope of portfolio management?
3. Why do investors invest in portfolio of securities and not in individual securities?
4. List the major types of investments risks?
5. Explain the risk diversification?
6. What do you mean by risk return trade off?
7. How to manage the risk in portfolio?
8. Who can be a portfolio manager?
9. How you can manage the portfolio risk?
10. What are the SEBI Norms for being a portfolio manager?

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# Unit 13: Portfolio Selection

**Structure of Units**



## 13.0 Objectives

After completing this units, your should able to understand :

- The relationship between Risk and investor Preference.
- What is Efficient Frontier and forming efficient set?
- The Markowitz's approach to delineating efficient set.
- How to choose optimum portfolio through Simple Sharpe and Markowitz Optimization Model?
- What are CAPM and APT and understanding their assumptions?
- The Beta and its significance in the portfolio.

## 13.1 Introduction

This Chapter will provide an overview that: how should an investor go about selecting the one best portfolio to meet his needs? Or, more explicitly, how should an investor go about selecting securities to purchase and deciding how much amount to invest in each? This unit will first provide a logical approach to delineating efficient set, and present another model, such as simple Sharpe's optimization model, capital asset pricing model, arbitrage pricing theory, that simplifies the portfolio selection process to a great extent.

## 13.2 Selecting a 'Best' Portfolio

**Portfolio optimization** is the process of choosing the proportions of various assets to be held in a portfolio, in such a way as to make the portfolio better than any other according to some criterion. The criterion will combine, directly or indirectly, considerations of the expected value of the portfolio's rate of return as well as of the return's dispersion and possibly other measures of financial risk.

The author of the modern portfolio theory is Harry Markowitz who introduced the analysis of the portfolios of investments in his article “Portfolio Selection” published in the Journal of Finance in 1952. The new approach presented in this article included portfolio formation by considering the expected rate of return and risk of individual stocks and, crucially, their interrelationship as measured by correlation. Prior to this investors would examine investments individually, build up portfolios of attractive stocks, and not consider how they related to each other. Markowitz showed how it might be possible to better of these simplistic portfolios by taking into account the correlation between the returns on these stocks. The diversification plays a very important role in the modern portfolio theory. Markowitz approach is viewed as a single period approach: at the beginning of the period the investor must make a decision in what particular securities to invest and hold these securities until the end of the period. Because a portfolio is a collection of securities, this decision is equivalent to selecting an optimal portfolio from a set of possible portfolios. Essentiality of the **Markowitz portfolio theory (MTP) is the problem of optimal portfolio selection.**

The method used in selecting the most desirable portfolio involves the use of ***indifference curves***. These curves represent an investor's preferences for risk and return. It can be drawn on a two-dimensional graph, where the horizontal axis usually indicates risk as measured by variance or standard deviation and the vertical axis indicates reward as measured by expected return. Using variance as relevant risk measure comes from Markowitz's paper and is always used in practice, although other possibilities have been considered. This definition gives us the following properties, assuming we have a 'rational investor':

All portfolios that lie on the same indifference curve are equally desirable to the investor (even though they have different expected returns and variance.) An obvious implication is that indifference curves do not intersect. An investor will find any portfolio that is lying on an indifference curve that is "further northwest" to be more desirable than any portfolio lying on an indifference curve that is "not as far northwest."

But how indifference curves shaped? Generally it is assumed that investors are *risk averse*, which means that the investor will choose the portfolio with the smaller variance given the same return. Risk averse investors will not want to take fair gambles (where the expected payoff is zero). These two assumptions of risk aversion cause indifference curves to be positively sloped and convex.

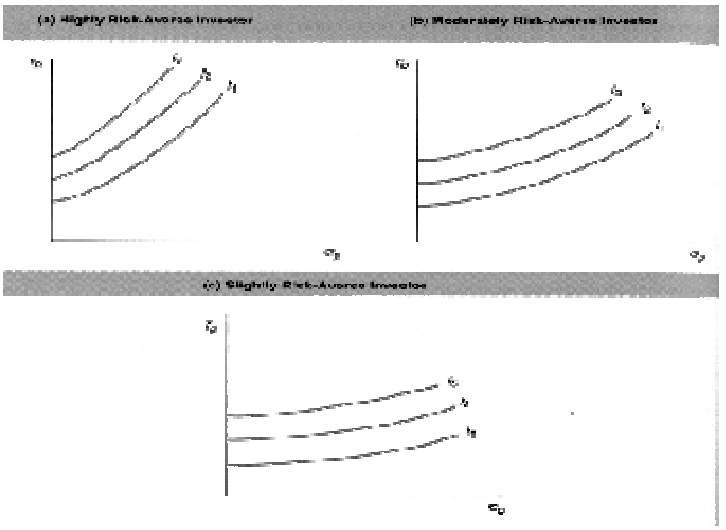

Figure 13.1 A high, moderately and slightly risk averse indifference curves

**Two important fundamental assumptions** of indifference curve that causes it to be positively sloped and convex.

1. The investors are assumed to prefer higher levels of return to lower levels of return, because the higher levels of return allow the investor to spend more on consumption at the end of the investment period. Thus, given two portfolios with the same standard deviation, the investor will choose the portfolio with the higher expected return. This is called an ***assumption of non satiation.***
2. Investors are risk averse. It means that the investor when given the choice will choose the investment or investment portfolio with the smaller risk. This is called ***assumption of risk aversion.***

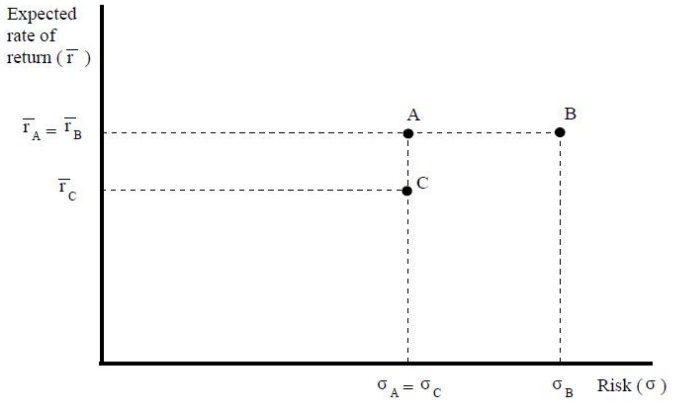


**Figure 13.2 Portfolio choices using the assumptions of non satiation and risk aversion**

Fig13.2 gives an example how the investor chooses between 3 investments – A, B and C. Following the assumption of non satiation, investor will choose A or B which have the higher level of expected return than C. Following the assumption of risk aversion investor will choose A, despite of the same level of expected returns for investment A and B, because the risk (standard deviation) for investment A is lower than for investment B. In this choice the investor follows so called "furthest northwest "rule.

In reality there are an infinitive number of portfolios available for the investment. Is it means that the investor needs to evaluate all these portfolios on return and risk basis? Markowitz portfolio theory answers this question using ***efficient set theorem*** the portfolio theory considers a universe of risky investments and explores these possible investments in order to find the optimum portfolio. So, for a given amount of risk, MTP explains how to select a portfolio with maximum returns and with a given amount of return, MTP explains how to select a portfolio with minimum risk.

Suppose you have all the required data (expected returns, volatility, and correlations) for all the investments you are considering. Using this data, you can create various portfolios with different portfolio risk and return profiles. Among all these portfolios, choose the optimal portfolios in either of the following way:

- Identify all the portfolios that have the same risk (volatility). From this sub-set of portfolios, choose the one that has the highest return.
- Identify all the portfolios that have the same returns. From this sub-set of portfolios, choose the one that has the lowest risk.

Both the methods will produce a set of optimal portfolios. This set of optimal portfolios is called the efficient frontier.

If you plot all the portfolios that you could make using the universe of risky securities that you have, the graph will look something like the one below:

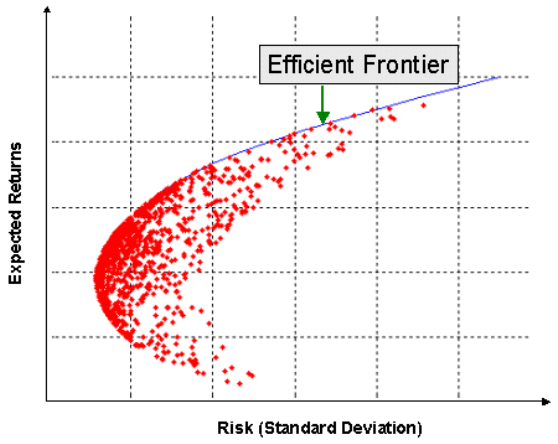


**Figure 13.3 Efficient Frontier**

Each red dot represents the mean and standard deviation of a portfolio. The blue line is the efficient frontier. The efficient frontier has all the optimal portfolios. Portfolios on the efficient frontier have maximum return for a given level of risk or, alternatively, minimum risk for a given level of return. Clearly, a rational investor will select a portfolio on the efficient frontier.

Furthermore, if a risk-free investment is introduced into the universe of assets, then the line passing through the intercept representing risk free asset becomes the tangential to the efficient frontier, and this line is called the ***Capital Market Line (CML)*** and the portfolio at the point (M) (Figure 13.4) at which it is tangential is called the ***Market Portfolio.***

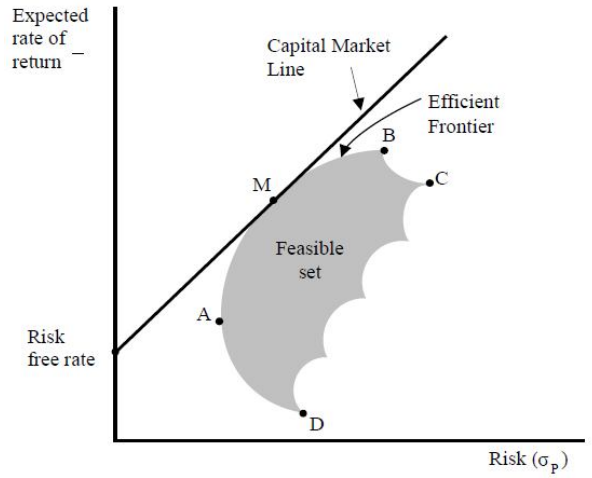


**Figure13.4 Capital Market Line and Market Portfolio**

**Capital Market Line(CML):** A line used in the capital asset pricing model to illustrate the rates of return for efficient portfolios depending on the risk-free rate of return and the level of risk (standard deviation) for a particular portfolio. The CML is derived by drawing a tangent line from the intercept point on the efficient frontier to the point where the expected return equals the risk-free rate of return. The CML is considered to be superior to the efficient frontier since it takes into account the inclusion of a risk-free asset in the portfolio.

### 13.2.1.2 The Expected Rate of Return and Risk of Portfolio

Following Markowitz efficient set portfolios approach an investor should evaluate alternative portfolios inside feasibility set on the basis of their expected returns and standard deviations using indifference curves. Thus, the methods for calculating expected rate of return and standard deviation of the portfolio must be discussed.

***The expected rate of return of the portfolio*** can be calculated in some alternative ways. The Markowitz focus was on the end-of-period wealth (terminal value) and using these expected end-of-period values for each security in the portfolio the expected end-of-period return for the whole portfolio can be calculated. But the portfolio really is the set of the securities thus the expected rate of return of a portfolio should depend on the expected rates of return of each security included in the portfolio. This alternative method for calculating **the expected rate of return on the portfolio (E(r) p)** is the weighted average of the expected returns on its component securities:

$$E_{(r)p} = \sum_{i=1}^{n} w_i * E_i(r) = E_1(r) + w_2 * E_2(r) + \ldots + w_n * E_n(r),$$

here wi - the proportion of the portfolio's initial value invested in security i;

$E_i(r)$ - the expected rate of return of security I;

n - the number of securities in the portfolio.

Because a portfolio‘s expected return is a weighted average of the expected returns of its securities, the contribution of each security to the portfolio‘s expected rate of return depends on its expected return and its proportional share from the initial portfolio‘s market value (weight). Nothing else is relevant. The conclusion here could be that the investor who simply wants the highest possible expected rate of return must keep only one security in his portfolio which has a highest expected rate of return. But why the majority of investors don‘t do so and keep several different securities in their portfolios? Because they try to diversify their portfolios aiming to reduce the investment portfolio risk.

**Risk of the portfolio**

The most often used measure for the risk of investment is standard deviation, which shows the volatility of the securities actual return from their expected return. If a portfolio‘s expected rate of return is a weighted average of the expected rates of return of its securities, the calculation of standard deviation for the portfolio can‘t simply use the same approach. The reason is that the relationship between the securities in the same portfolio must be taken into account. The relationship between the assets can be estimated using the covariance and coefficient of correlation. As covariance can range from “–” to “+” infinity, it is more useful for identification of the direction of relationship (positive or negative), coefficients of correlation always lies between -1 and +1 and is the convenient measure of intensity and direction of the relationship between the assets.

***Risk of the portfolio, which consists of 2 securities (A ir B):***

$$\delta_p = \left(w^2_A \times \delta^2_A + w^2_B \times \delta^2_B + 2\, w_A \times w_B \times k_{AB} \times \delta_A \times \delta_B\right)^{1/2},$$

here: $w_A$ ir $w_B$ - the proportion of the portfolio’s initial value invested in security A and B ( wA + wB = 1);

$\delta_A$ ir $\delta_B$ - standard deviation of security A and B;

$k_{AB}$ - coefficient of coreliation between the returns of security A and B.

***Standard deviation of the portfolio consisting n securities*:**

$$\delta = \left(\sum_{i=1}^{n}\sum_{j=1}^{n} w_i\, w_j\, k_{ij}\, \delta_i\, \delta_j\right)^{1/2},$$

here: $w_i$ ir $w_j$ - the proportion of the portfolio’s initial value invested in security **i** and j ( wi + wj = 1);

$\delta_i$ ir $\delta_j$ - standard deviation of security i and j;

$k_{ij}$ - coefficient of coreliation between the returns of security i and **j**.

### 13.2.1.3 Simple Markowitz Optimization Model

It is possible to develop a simple decision rule for selecting an optimal portfolio for an investor that can take both risk and return into account. This is called a risk-adjusted return. For simplicity, it can be termed the utility of the portfolio for the investor in question. Utility is the expected return of the portfolio minus a risk penalty. This risk penalty depends on portfolio risk and investor’s risk tolerance.

**The Risk Penalty:**

The more risk one bears, the more undesirable is any additional unit of risk. Theoretically, and as a computational convenience, it can be assumed that twice the risk is four times as undesirable. The risk penalty is as follows:

**Risk Penalty = Risk Squared / Risk Tolerance**

Risk squared is the variance of return of the portfolio. Risk tolerance is the number from 0 to 100.The size of the risk tolerance number reflects the investor's willingness to bear more risk for more return. Low (high) tolerance indicated low (high) willingness. Risk penalty is less as tolerance is increased.

For example, if a portfolio's expected return is 13 percent, variance of return (risk squared)is 225 percent, and the investor's risk tolerance is 50, the risk penalty is 4.5 percent:

Risk Penalty= 225%/50 = 4.5%

Because utility is expected return minus risk penalty, we have:

Utility= 13 – 4.5 = 8.5%

The optimal (best) portfolio for an investor would be the one from the opportunity set (efficient frontier) that maximizes utility.

## 13.2.2 The Sharpe Index Model

### 13.3.2.1 Single Index Model

The **single-index model (SIM)** is a simple asset pricing model to measure both the risk and the return of a stock, commonly used in the finance industry. Mathematically the SIM is expressed as:

$$r_{it} - r_f = \alpha_i + \beta_i(r_{mt} - r_f) + \epsilon_{it}$$
$$\epsilon_{it} \sim N(0, \sigma_i)$$

where:

$r_{it}$ is return to stock $i$ in period $t$
$r_f$ is the risk free rate (i.e. the interest rate on treasury bills)
$r_{mt}$ is the return to the market portfolio in period $t$
$\alpha_i$ is the stock's alpha, or abnormal return
$\beta_i$ is the stock's beta, or responsiveness to the market return
Note that $r_{it} - r_f$ is called the excess return on the stock, $r_{mt} - r_f$ the excess return on the market
$\epsilon_{it}$ are the residual (random) returns, which are assumed independent normally distributed with mean zero and standard deviation $\sigma_i$

These equations show that the stock return is influenced by the market (beta), has a firm specific expected value (alpha) and firm-specific unexpected component (residual). Each stock's performance is in relation to the performance of a market index (such as the All Ordinaries). Security analysts often use the SIM for such functions as computing stock betas, evaluating stock selection skills, and conducting event studies.

**Assumptions of the single-Index Model**

To simplify analysis, the single-index model assumes that there is only 1 macroeconomic factor that causes the systematic risk affecting all stock returns and this factor can be represented by the rate of return on a market index, such as the S&P 500. According to this model, the return of any stock can be decomposed into the expected excess return of the individual stock due to firm-specific factors, commonly denoted by its alpha coefficient (α), the return due to macroeconomic events that affect the market, and the unexpected microeconomic events that affect only the firm.

The term $\beta_i(r_m - r_f)$ represents the movement of the market modified by the stock's beta, while $\epsilon_i$ represents the unsystematic risk of the security due to firm-specific factors. Macroeconomic events, such as changes in interest rates or the cost of labor, causes the systematic risk that affects the returns of all stocks, and the firm-specific events are the unexpected microeconomic events that affect the returns of specific firms, such as the death of key people or the lowering of the firm's credit rating, that would affect the firm, but would have a negligible effect on the economy. In a portfolio, the unsystematic risk due to firm-specific factors can be reduced to zero by diversification.

**The index model is based on the following:**

- Most stocks have a positive covariance because they all respond similarly to macroeconomic factors.
- However, some firms are more sensitive to these factors than others, and this firm-specific variance is typically denoted by its beta (β), which measures its variance compared to the market for one or more economic factors.
- Covariance among securities results from differing responses to macroeconomic factors. Hence, the covariance of each stock can be found by multiplying their betas and the market variance:
- Cov ($R_i, R_k$) = $\beta_i \beta_k \sigma^2$

This last equation greatly reduces the computations required to determine covariance because otherwise the covariance of the securities within a portfolio must be calculated using historical returns, and the covariance of each possible pair of securities in the portfolio must be calculated independently. With this equation, only the betas of the individual securities and the market variance need to be estimated to calculate covariance. Hence, the index model greatly reduces the number of calculations that would otherwise have to be made to model a large portfolio of thousands of securities.

## Activity A :

1. List out two major points of difference between Markowitz's approach and single-Index Model of selecting optimal portfolio.

### 13.2.2.2 Simple Sharpe Optimization Model

Simple Sharpe Portfolio optimisation model enables the investor to find a portfolio that best meets the goals, objectives and risk tolerance of the investor.

The method also stresses on ***portfolio optimisation***, which is an important component of the portfolio selection process. It helps to select a set of scrips, which provides the highest rate of return for the lowest risk that the investor is willing to take.

***Sharpe's excess return to beta ratio*** is a single number that measures the desirability of any stock to be included in the optimal portfolio. It is equal to -

**$(R_i - R_F) / \beta_i$**

Where:

$R_i$ = expected return on stock i

$R_F$ = return on riskless asset

$\beta_i$ = expected change in the rate of return on stock i associated with a 1% change in the market return.

Stocks are ranked by ***excess return to beta*** (from the highest to the lowest). The higher the excess ***return to beta ratio,*** the more is the desirability of the stock to be included in the portfolio. However, before selecting the stock it is necessary to determine the cut-off rate **C*.** Stocks which have an ***excess return to beta*** **greater than C* must** be selected**.**

**Determination of Cut-off Rate C***

Cut-off rate of 'i' stocks can be calculated using the simple formula –

$$C_i = \frac{\sigma_m^2 \sum_{j=1}^{i} \frac{(R_j - R_F)/\beta_j}{\sigma_{ej}^2}}{1 + \sigma_m^2 \sum_{j=1}^{i} \left( \frac{\beta_j^2}{\sigma_{ej}^2} \right)}$$

Where:

$\sigma_m^2$ - the variance in the market index;

$\sigma_{ej}^2$ - the variance of a stock's movement that is not associated with the movement of the market index.

The following data are required to determine the optimal portfolio.

Assumptions: Variance of market = 10%

Risk Free rate of return is =5%

**Table: 13.1**

| Security | Mean Return ($R_i$) | Beta ($\beta_i$) | Unsystematic risk $\beta_{ei}^2$ | Excess return ($R_i - R_F$) | Sharpe ratio ($R_i - R_F$)/$\beta_i$ | Rank |
|---|---|---|---|---|---|---|
| 1 | 19 | 1 | 20 | 14 | 14 | 1 |
| 2 | 23 | 1.5 | 30 | 18 | 12 | 2 |
| 3 | 11 | 0.5 | 10 | 6 | 12 | 3 |
| 4 | 25 | 2 | 40 | 20 | 10 | 4 |
| 5 | 13 | 1 | 20 | 8 | 8 | 5 |
| 6 | 9 | 0.5 | 50 | 4 | 8 | 5 |
| 7 | 14 | 1.5 | 30 | 9 | 6 | 6 |

After ranking the security, in the table 13.2 cut off rate has been calculated. For the calculation of cut-off rate we first calculate the $C_i$ as if only the first ranked security is included in the portfolio. Then we calculate $C_i$ considering as if only the first and second ranked security is included in the optimum portfolio, and so on.

**Table: 13.2**

| Security | $(R_i - R_F)/\beta_i$ | $[(R_i - R_F)\beta_i]/ \sigma_{ei}^2$ | $\sum[(R_i - R_F)\beta_I]/ \sigma_{ei}^2$ | $\beta_i^2/\sigma_{ei}^2$ | $\Sigma\beta_i^2/\sigma_{ei}^2$ | $C_i$ |
|---|---|---|---|---|---|---|
| 1 | 14 | 0.7 | 0.7 | 0.05 | 0.05 | 4.67 |
| 2 | 12 | 0.9 | 1.6 | 0.125 | 0.125 | 7.11 |
| 3 | 12 | 0.3 | 1.9 | 0.15 | 0.15 | 7.60 |
| 4 | 10 | 1.0 | 2.9 | 0.25 | 0.25 | **8.29** |
| 5 | 8 | 0.4 | 3.3 | 0.3 | 0.3 | 8.25 |
| 6 | 8 | 0.04 | 3.34 | 0.305 | 0.305 | 8.25 |
| 7 | 6 | 0.45 | 3.79 | 0.38 | 0.38 | 7.9 |

The highest $C_i$ value is taken as the cut off point i.e. C*. The stocks ranked above C* have excess returns to beta than the cut off $C_i$ and all the stocks ranked below C* have low excess returns to beta. Here, the cut off rate is 8.29. Hence first four securities are included in the portfolio and last three are not.

**Determination of optimal portfolio**

Once the securities to be included in the portfolio are decided, the next step is to determine the weight of each security to be included in the portfolio as follows -

$$W_i = Z_i / \sum_{J=1}^{N} Z_j \text{ where } Z_i = \beta_i/\sigma_{ei}^2 [(R_i - R_F)/\beta_i - C^*]$$

In the above formula the second expression determines the relative investment in each security. The first determines the weight of each security in the portfolio so that they sum to 1. This ensures full investment.

**Table: 13.3**

| Security | $(R_i - R_F)/\beta_i$ | C* | $Z_i = \beta_i/\sigma_{ei}^2 [(R_i - R_F)/\beta_I - C^*]$ | $W_i = Z_i / \Sigma Z_j$ |
|---|---|---|---|---|
| 1 | 14 | **8.29** | 0.285 | 0.38 |
| 2 | 12 | **8.29** | 0.186 | 0.25 |
| 3 | 12 | **8.29** | 0.186 | 0.25 |
| 4 | 10 | **8.29** | 0.086 | 0.12 |
| | | | **$\sum Z_i$=0.743** | |

The above table reflects the amount to be invested in each security. Thus we see that Sharpe's model not only helps the investor to decide on the security to be included, but also determines their proportion in a portfolio, to ensure maximum return at minimum risk. The largest investment should be in the security 1 and smallest in security 4.

**Optimum Portfolio with Short Sales:**

The procedure used to calculate the optimal portfolio when short sales are allowed is, more or less similar to the procedure adopted for no short sales, except the cut off point concept. At first, the stocks have to be ranked by excess return to beta. Here, all the stocks are added to the portfolio. They are either held long or short. All the stock affects the cut-off point. The Z-value has to be calculated for each stock. If the Z-value is positive, the stock will be held long and if negative, it will be sold short. Stocks which are having excess return to beta above C* are held long as in the case of the portfolio without short sales. Stocks with an excess return to beta below C* are sold short. In above case of previous example $C^*=C_7=7.9$, if sgort sales are permitted, then

$$W_i = Z_i / \sum_{J=1}^{N} Z_j \text{ where } Z_i = \beta_i/\sigma_{ei}^2 [(R_i - R_F)/\beta - C^*]$$

Therefore with short sales,
$Z_1$= 1/20(14-7.9) = 0.305
$Z_2$= 1.5/30(12-7.9) = 0.205
$Z_3$= 0.5/10(12-7.9) = 0.205

$Z_4$= 2/40 (10-7.9) = 0.105
$Z_5$ = 1/20(8-7.9) = 0.005
$Z_6$=0.5/50(8-7.9) = 0.001
$Z_7$= 1.5/30(6-7.9) = -0.095
Therefore the seventh stock will be sold short.

### 13.2.3 Capital Asset Pricing Model (CAPM)

CAPM was developed by W. F. Sharpe. CAPM simplified Markowitz's Modern Portfolio theory, made it more practical. Markowitz showed that for a given level of expected return and for a given feasible set of securities, finding the optimal portfolio with the lowest total risk, measured as variance or standard deviation of portfolio returns, requires knowledge of the covariance or correlation between all possible security combinations. When forming the diversified portfolios consisting large number of securities investors found the calculation of the portfolio risk using standard deviation technically complicated.

**Measuring Risk in CAPM** is based on the identification of two key components of total risk (as measured by variance or standard deviation of return):

- Systematic risk
- Unsystematic risk

**Systematic risk** is that associated with the market (purchasing power risk, interest rate risk, liquidity risk, etc.)

***Unsystematic risk*** is unique to an individual asset (business risk, financial risk, and other risks, related to investment into particular asset).

Unsystematic risk can be diversified away by holding many different assets in the portfolio, however systematic risk can't be diversified (see Fig 13.4). In CAPM investors are compensated for taking only systematic risk. Though, CAPM only links investments via the market as a whole.

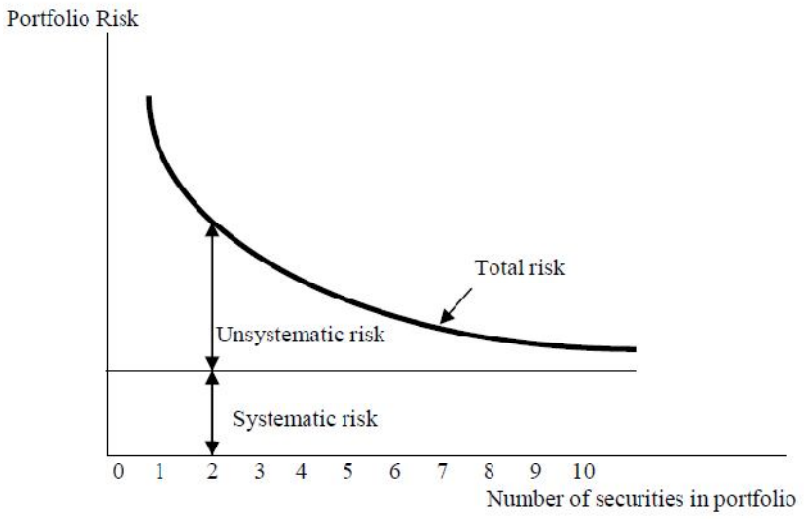


**Figure.13.4 Portfolio risk and the level of diversification**

The essence of the CAPM: the more systematic risk the investor carry, the greater is his / her expected return.

The CAPM being theoretical model is based on some important assumptions:

- All investors look only one-period expectations about the future;
- Investors are price takers and they can't influence the market individually;
- There is risk free rate at which an investors may either lend (invest) or borrow money.
- Investors are risk-averse,
- Taxes and transaction costs are irrelevant.
- Information is freely and instantly available to all investors.

Following these assumptions, the **CAPM predicts what an expected rate of return for the investor should be given other statistics about the expected rate of return in the market and market risk (systematic risk):**

$$\mathbf{E(r_j) = R_f + \beta_{(j)} * ( E(r_M) - R_f ),}$$

here: $E(r_j)$ - expected return on stock j;

$R_f$ - risk free rate of return;

$E(r_M)$ - expected rate of return on the market

$\beta_{(j)}$ - coefficient Beta, measuring undiversified risk of security j.

Several of the assumptions of CAPM seem unrealistic. Investors really are concerned about taxes and are paying the commissions to the broker when buying or selling their

securities. And the investors usually do look ahead more than one period. Large institutional investors managing their portfolios sometimes can influence market by buying or selling big amounts of the securities. All things considered, the assumptions of the CAPM constitute only a modest gap between the theory and reality. But the empirical studies and especially wide use of the CAPM by practitioners show that it is useful instrument for investment analysis and decision making in reality.

As can be seen in Fig.13.5, the straight line having an intercept of $R_f$ and slope of $\beta(_j)$ * ( $E(r_M)$ - $R_f$). This relationship between the expected return and Beta is known as Security Market Line (SML). Each security can be described by its specific security market line; they differ because their Betas are different and reflect different levels of market risk for these securities.

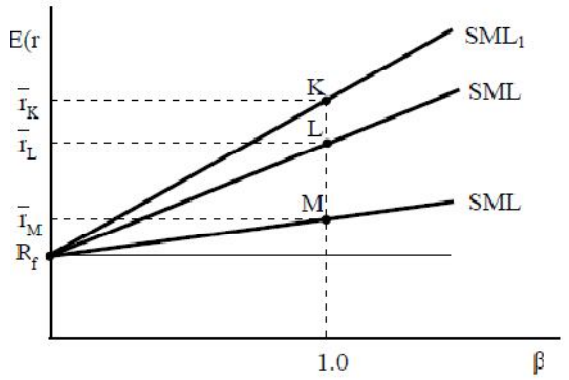


**Figure.13.5. Security Market Line (SML)**

**Security Market Line (SML):** A line that graphs the systematic, or market, risk versus return of the whole market at a certain time and shows all risky marketable securities. It is also referred to as the "characteristic line". The SML essentially graphs the results from the capital asset pricing model (CAPM) formula. The x-axis represents the risk (beta), and the y-axis represents the expected return. The market risk premium is determined from the slope of the SML.

The security market line is a useful tool in determining whether an asset being considered for a portfolio offers a reasonable expected return for risk. Individual securities are plotted on the SML graph. If the security's risk versus expected return is plotted above the SML, it is undervalued because the investor can expect a greater return for the inherent risk. A security plotted below the SML is overvalued because the investor would be accepting less return for the amount of risk assumed.

**Beta Coefficient (β)**

Each security has its individual systematic -undiversified risk, measured using coefficient Beta. Coefficient Beta (β) indicates how the price of security/ return on security depends upon the market forces. Thus, coefficient Beta for any security can be calculated using formula:

$$\beta_J = \frac{\text{Cov}(r_J, r_M)}{\delta^2(r_M}$$

## Table: 13.4

## Interpretation of Coefficient Beta (β)

**Interpretation of coefficient Beta (β)**

| Beta | Direction of changes in security's return in comparison to the changes in market's return | Interpretation of β meaning |
|---|---|---|
| 2,0 | The same as market | Risk of security is twice higher than market risk |
| 1,0 | The same as market | Security's risk is equal to market risk |
| 0,5 | The same as market | Security's risk twice lower than market risk |
| 0 | There is no relationship | Security's risk are not influenced by market risk |
| Minus 0,5 | The opposite from the market | Security's risk twice lower than market risk, but in opposite direction |
| Minus 1,0 | The opposite from the market | Security's risk is equal to market risk but in opposite direction |
| Minus 2,0 | The opposite from the market | Risk of security is twice higher than market risk, but in opposite direction |

One very important feature of Beta to the investor is that the Beta of portfolio is simply a weighted average of the Betas of its component securities, where the proportions invested in the securities are the respective weights. Thus, ***Portfolio Beta*** can be calculated using formula:

$$\beta_p = w_1\beta_1 + w_2\beta_2 + \ldots\ldots + w_n\beta_n = \sum_{i=1}^{n} w_i * \beta_i,$$

here $w_i$ - the proportion of the portfolio's initial value invested in security i;

$\beta_i$ - coefficient Beta for security i.

Earlier it was shown that the expected return on the portfolio is a weighted average of the expected returns of its components securities, where the proportions invested in the securities are the weights. This means that because every security plots on the SML, so will every portfolio. That means, that not only every security, but also every portfolio must plot on an upward sloping straight line, with the expected return on the vertical axis and Beta on the horizontal axis.

## Activity B :

1. Explain why most investors prefer to hold a diversified portfolio of securities as opposed to placing all of their wealth in a single asset.

### 13.2.4Arbitrage Pricing Theory (APT)

APT was proposed by Stephen S. Rose and presented in his article "The arbitrage theory of Capital Asset Pricing", published in Journal of Economic Theory in 1976. Still there is a potential for it and it may sometimes displace the CAPM. In the CAPM returns on individual assets are related to returns on the market as a whole. The key point behind APT is the rational statement that the market return is determined by a number of different factors. These factors can be fundamental factors or statistical. If these factors are essential, there to be no arbitrage opportunities there must be restrictions on the investment process. **Arbitrage** can be explained as the earning of riskless profit by taking advantage of differential pricing for the same assets or security. Arbitrage is widely applied investment tactic.

**APT states that the expected rate of return of security J is the linear function from the complex economic factors common to all securities and can be estimated using formula:**

$$E(r_J) = E(\acute{r}_J) + \beta_{1J} I_{1J} + \beta_{2J} I_{2J} + \ldots + \beta_{nJ} I_{nJ} + \varepsilon_J ,$$

here: $E(r_J)$ - expected return on stock J;

$E(\acute{r}_J)$ - expected rate of return for security J, if the influence of all factors is 0;

$I_{iJ}$ - the change in the rate of return for security J, influenced by economic factor i (i = 1, ..., n);

$\beta_{iJ}$ - coefficient Beta, showing sensitivity of security's J rate of return upon the factor i (this influence could be both positive or negative);

$\varepsilon_J$ - error of rounding for the security J (expected value – 0).

It is important to note that the arbitrage in the APT is only approximate; relating diversified portfolios, on assumption that the asset unsystematic (specific) risks are negligible compared with the factor risks. There could presumably be an infinitive number of factors, although the empirical research done by S. Ross together with R. Roll (1984) identified four factors – economic variables, to which assets having even the same CAPM Beta, are differently sensitive:

- Inflation;
- Industrial production;
- Risk premiums;
- Slope of the term structure in interest rates.

In practice an investor can choose the macroeconomic factors which seem important and related with the expected returns of the particular asset. The examples of possible macroeconomic factors which could be included in using APT model:

- GDP growth;
- An interest rate;
- An exchange rate;
- A default spread on corporate bonds, etc.

Including more factors in APT model seems logical. The institutional investors and analysts closely watch macroeconomic statistics such as the money supply, inflation, interest rates, unemployment, changes in GDP, political events and many others. Reason for this might be their belief that new information about the changes in these macroeconomic indicators will influence future asset price movements. But it is important to point out that not all investors or analysts are concerned with the same set of economic information and they differently assess the importance of various macroeconomic factors to the assets they have invested already or are going to invest. At the same time the large number of the factors in the APT model would be impractical, because the models seldom are 100 percent accurate and the asset prices are function of both macroeconomic factors and noise. The noise is coming from minor factors, with a little influence to the result – expected rate of return.

The APT does not require identification of the market portfolio, but it does require the specification of the relevant macroeconomic factors. Much of the current empirical APT research is focused on identification of these factors and the determination of the factors' Betas. And this problem is still unsolved. Although more than two decades have passed since S. Ross introduced APT model, it has yet to reach the practical application stage. The CAPM and APT are not really essentially different, because they are developed for determining an expected rate of return based on one factor i.e. market portfolio (CAPM) or a number of macroeconomic factors (APT). But both models predict how the return on asset will result from factor sensitivities and this is of great importance to the investor.

## 13.3 Summary

Essentiality of the Markowitz portfolio theory is the problem of optimal portfolio selection. The Markowitz approach included portfolio formation by considering the expected rate of return and risk of individual stocks measured as standard deviation, and their interrelationship as measured by correlation. The diversification plays a key role in the modern portfolio theory. Two important fundamental assumptions than applying indifference curves to Markowitz portfolio theory. An assumption of nonsatiation assumes that the investors prefer higher levels of return to lower levels of return, because the higher levels of return allow the investor to spend more on consumption at the end of the investment period. An assumption of risk aversion assumes that the investor when given the choice will choose the investment or investment portfolio with the smaller risk, i.e. the investors are risk averse. Efficient set theorem states that an investor will choose his/ her optimal portfolio from the set of the portfolios that offer maximum expected return for varying level of risk, and offer minimum risk for varying levels of expected return.Efficient set of portfolios involves the portfolios that the investor will find optimal ones. These portfolios are lying on the "northwest boundary" of the feasible set and are called an efficient frontier. The efficient frontier can be described by the curve in the risk-return space with the highest expected rates of return for each level of risk. Feasible set is opportunity set, from which the efficient set of portfolio can be identified. The feasibility set represents all portfolios that could be formed from the number of securities and lie either or within the boundary of the feasible set.

Capital Market Line (CML) shows the trade off-between expected rate of return and risk for the efficient portfolios under determined risk free return.The expected rate of return on the portfolio is the weighted average of the expected returns on its component securities.The calculation of standard deviation for the portfolio can't simply use the weighted average approach. The reason is that the relationship between the securities in the same portfolio measured by coefficient of correlation must be taken into account. When forming the diversified portfolios consisting large number of securities investors found the calculation of the portfolio risk using standard deviation technically complicated. Simple Sharpe Portfolio optimisation model enables the investor to find a portfolio that best meets the goals, objectives and risk tolerance of the investor. The method also stresses on ***portfolio optimisation***, which is an important component of the portfolio selection process. It helps to select a set of scrips, which provides the highest rate of return for the lowest risk that the investor is willing to take. Model not only helps the investor to decide on the security to be included, but also determines their proportion in a portfolio, to ensure maximum return at minimum risk.The single-index model assumes that there is only 1 macroeconomic factor that causes the systematic risk

affecting all stock returns and this factor can be represented by the rate of return on a market index. According to this model, the return of any stock can be decomposed into the expected excess return of the individual stock due to firm-specific factors, commonly denoted by its alpha coefficient (α). Measuring Risk in Capital asset Pricing Model (CAPM) is based on the identification of two key components of total risk: systematic risk and unsystematic risk. Systematic risk is that associated with the market. Unsystematic risk is unique to an individual asset and can be diversified away by holding many different assets in the portfolio. In CAPM investors are compensated for taking only systematic risk.The essence of the CAPM: CAPM predicts what an expected rate of return for the investor should be, given other statistics about the expected rate of return in the market, risk free rate of return and market risk (systematic risk).

Each security has its individual systematic - undiversified risk, measured using coefficient Beta. Coefficient Beta (β) indicates how the price of security/ return on security depends upon the market forces. The Beta of the portfolio is simply a weighted average of the Betas of its component securities, where the proportions invested in the securities are the respective weights. Security Market Line (SML) demonstrates the relationship between the expected return and Beta. Each security can be described by its specific security market line; they differ because their Betas are different and reflect different levels of market risk for these securities. Arbitrage Pricing Theory (APT) states, that the expected rate of return of security is the linear function from the complex economic factors common to all securities. There could presumably be an infinitive number of factors. The examples of possible macroeconomic factors which could be included in using APT model are GDP growth; an interest rate; an exchange rate; a default spread on corporate bonds, etc.

## 13.4 Self Assessment Questions

1. Explain Sharpe's Simple portfolio optimization Model.
2. In terms of the Markowitz portfolio model, explain how an investor identifies his / her optimal portfolio. What specific information does an investor need to identify optimal portfolio?
3. How many portfolios are on an efficient frontier? How is an investor's risk aversion indicated in an indifference curve?
4. Describe the key assumptions underlying CAPM.
1. If the risk-free rate of return is 6% and the return on the market portfolio is 10%, what is the expected return on an asset having a Beta of 1,4, according to the CAPM?
2. Under the CAPM, at what common points do the security market lines of individual stocks intersect?

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# Unit – 14 Portfolio Evaluation

## Structure of Units



## 14.0 Objectives

After completing this unit, you would be able to understand

- Major requirements that clients expect from their portfolio managers
- The peer group comparison method of evaluating an investor's performance
- The Treynor portfolio performance measure
- The Sharpe portfolio performance measure
- The critical difference between the Treynor and Sharpe portfolio performance measures
- The Jensen portfolio performance measure

## 14.1 Introduction

Investors always are interested in evaluating the performance of their portfolios. It is both expensive and time consuming to analyze and select securities for a portfolio, so an individual, company, or institution must determine whether this effort is worth the time and money invested in it. Investors managing their own portfolios should evaluate their performance as well as those who pay to professional money managers. In the latter case, it is imperative to determine whether the investment performance justifies the service's cost.

This chapter outlines the theory and practice of evaluating the performance of an investment portfolio. In the first section, we consider what is required of a portfolio manager. In section two, we briefly discuss how performance was evaluated before portfolio theory and the CAPM were developed. The rest of the section contains a detailed discussion of three portfolio performance evaluation techniques (referred to as *composite performance measures*) that consider return and risk.

## 14.2 What is required of a Portfolio Manager*?*

There are two major requirements of a portfolio manager:

a) The ability to derive above-average returns for a given risk class

b) The ability to diversify the portfolio completely to eliminate all unsystematic risk, relative to the portfolio's benchmark

In terms of return, the first requirement is obvious, but the need to consider *risk* in this context was generally not apparent before the 1960s, when work in portfolio theory showed its significance. In modern theory, superior risk-adjusted returns can be derived through either superior timing or superior security selection.

An equity portfolio manager who can do a superior job of predicting the peaks or troughs of the equity market can adjust the portfolio's composition to anticipate market trends, holding a completely diversified portfolio of high-beta stocks through rising markets and favouring low beta stocks and money market instruments during declining markets. Bigger gains in rising markets and smaller losses in declining markets give the portfolio manager above-average risk adjusted returns.

A fixed-income portfolio manager with superior timing ability changes the portfolio's duration in anticipation of interest rate changes by increasing the duration of the portfolio in anticipation of failing interest rates and reducing the duration of the portfolio when rates are expected to rise. If properly executed, this bond portfolio management strategy likewise provides superior risk-adjusted returns.

As an alternative strategy, a portfolio manager and his or her analysts may try consistently to select undervalued stocks or bonds for a given risk class. Even without superior market timing, such a portfolio would likely experience above-average risk-adjusted returns.

The second factor to consider in evaluating a portfolio manager is the ability to diversify completely. A well diversified portfolio may yield better returns at much lesser risk.

### Activity A :

Discuss the traits required by a portfolio manager.

## 14.3 Composite Portfolio Performance Measures

Portfolio evaluation provides a feedback about the performance of the portfolio to evolve better management strategy. Evaluation of a portfolio performance is a continuous process. The managed portfolios are commonly known as mutual funds. Various managed portfolios are prevalent in capital markets. Their relative risks and return need to be evaluated.

**Portfolio Evaluation before 1960:** At one time, investors evaluated portfolio performance almost entirely on the basis of the rate of return. They were aware of the concept of risk but did not know how to quantify or measure it, so they could not consider it explicitly. Developments in portfolio theory in the early 1960s showed investors how to quantify and measure risk in terms of the variability of returns. Still, because no single measure combined both return and risk, the two factors had to be considered separately as researchers had done in several early studies. Specifically, the investigators grouped portfolios into similar risk classes based on a measure of risk (such as the variance of return) and then compared the rates of return for alternative portfolios directly within these risk classes.

This section describes in detail the four major composite equity portfolio performance measures that combine risk and return performance into a single value. We describe each measure and its intent and then demonstrate how to compute it and interpret the results. We also compare the measures and discuss how they differ and why they rank portfolios differently.

**Peer Group Comparisons*:*** Before examining measures of portfolio performance that adjust an investor's return for the level of investment risk, we first consider the concept of a **peer group comparison**. This method, which Kritzman describes as the most common manner of evaluating portfolio managers, collects the returns produced by a representative universe of investors over a specific period of time and displays them in a simple box plot format. To aid the comparison, the universe is typically divided into percentiles, which indicate the relative ranking of a given investor. For instance, a portfolio manager that produced a one-year return of 12.4 percent would be in the 10th percentile if only nine other portfolios in a universe of 100 produced a higher return. Although these comparisons can get quite detailed, it is common for the box plot graphic to include the maximum and minimum returns, as well as the returns falling at the 25th, 50th (i.e., the median), and 75th percentiles.

Portfolio performance evaluation involves determining periodically how the portfolio performed in terms of not only the return earned, but also the risk experienced by the investor. For portfolio evaluation appropriate measures of return and risk as well as relevant standards (or "benchmarks") are needed.

In general, the market value of a portfolio at a point of time is determined by adding the markets value of all the securities held at that particular time. The market value of the portfolio at the end of the period is calculated in the same way, only using end-of- period prices of the securities held in the portfolio.

***The return on the portfolio (Rp):***

$$r_p = (V_e - V_b) / V_b,$$

here: $V_e$ - beginning value of the portfolio;

$V_b$ - ending value of the portfolio.

The essential idea behind performance evaluation is to compare the returns which were obtained on portfolio with the results that could be obtained if more appropriate alternative portfolios had been chosen for the investment. Such comparison portfolios are often referred to as benchmark portfolios. In selecting them investor should be certain that they are relevant, feasible and known in advance. The benchmark should reflect the objectives of the investor.

***Portfolio Beta*** can be used as an indication of the amount of market risk that the portfolio had during the time interval. It can be compared directly with the betas of other portfolios. We cannot compare the ex post or the expected and the expected return of two portfolios without adjusting for risk. To adjust the return for risk before comparison of performance risk adjusted measures of performance can be used:

- Treynor's ratio;
- Sharpe's ratio;
- Jensen's Alpha.

***Treynor's ratio:*** **Treynor** developed the first **composite measure** of portfolio performance that included risk. He postulated two components of risk: (1) risk produced by general market fluctuations and (2) risk resulting from unique fluctuations in the portfolio securities. To identify risk due to market fluctuations, he introduced the *characteristic line,* which defines the relationship between the rates of return for a portfolio over time and the rates of return for an appropriate market portfolio, as we discussed earlier. He noted that the characteristic line's slope measures the *relative volatility* of the portfolio's returns in relation to returns for the aggregate market. As we also know, this slope is the portfolio's beta coefficient. A higher slope (beta) characterizes a portfolio that is more sensitive to market returns and that has greater market risk.

Deviations from the characteristic line indicate unique returns for the portfolio relative to the market. These differences arise from the returns on individual stocks in the portfolio. In a completely diversified portfolio, these unique returns for individual stocks should cancel out. As the correlation of the portfolio with the market increases, unique risk declines and diversification improves. Because Treynor was not concerned about this aspect of portfolio performance, he gave no further consideration to the diversification measure.

***Treynor's ratio*** shows an excess actual return over risk free rate, or risk premium, by unit of systematic risk, measured by Beta:

$$T = \frac{\overline{R}_i - \overline{RFR}}{\beta_i}$$

where:

$\overline{R}_i$ = the average rate of return for portfolio *i* during a specified time period
$\overline{RFR}$ = the average rate of return on a risk-free investment during the same time period
$\beta_i$ = the slope of the fund's characteristic line during that time period (this indicates the portfolio's relative volatility)

Treynor was interested in a measure of performance that would apply to all investors—regardless of their risk preferences. Building on developments in capital market theory, he introduced a risk-free asset that could be combined with different portfolios to form a straight portfolio possibility line. He showed that rational, risk-averse investors would always prefer portfolio possibility lines with larger slopes because such high-slope lines would place investors on higher indifference curves.

As noted, a larger *T* value indicates a larger slope and a better portfolio for all investors (regardless of their risk preferences). Because the numerator of this ratio is the *risk premium* and the denominator is a measure of risk, the total expression indicates the portfolio's *risk premium return per unit of risk.* All risk-averse investors would prefer to maximize this value. Note that the risk variable beta measures systematic risk and tells us nothing about the diversification of the portfolio. It *implicitly assumes* a completely diversified portfolio, which means that systematic risk is the relevant risk measure.

***Demonstration of Comparative Treynor Measures*** To understand how to use and interpret this measure of performance, suppose that during the most recent 10-year period, the average annual total rate of return (including dividends) on an aggregate market portfolio, such as the S&P 500, was 14 percent and the average nominal rate of return on government T-bills was 8 percent. Assume that, as administrator of a large pension fund that has been divided among three money managers during the past 10 years, you must decide whether to renew your investment management contracts with all three managers. To do this, you must measure how they have performed.

Assume you are given the following results:

| Investment Manager | Average Annual Rate of Return | Beta |
|---|---|---|
| W | 0.12 | 0.90 |
| X | 0.16 | 1.05 |
| Y | 0.18 | 1.20 |

You can compute *T* values for the market portfolio and for each of the individual portfolio managers as follows:

$$T_M = \frac{0.14 - 0.08}{1.00} = 0.060$$

$$T_W = \frac{0.12 - 0.08}{0.90} = 0.044$$

$$T_X = \frac{0.16 - 0.08}{1.05} = 0.076$$

$$T_Y = \frac{0.18 - 0.08}{1.20} = 0.083$$

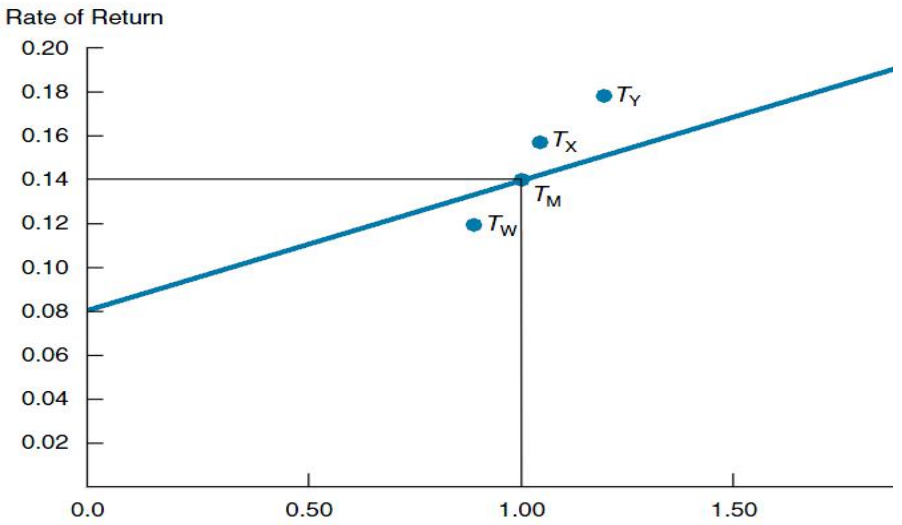


**Figure : 14.1 Plot of performance on SML (T Measure)**

These results indicate that Investment Manager W not only ranked the lowest of the three managers but did not perform as well as the aggregate market. In contrast, both X and Y beat the market portfolio, and Manager Y performed somewhat better than Manager X. In terms of the SML, both of their portfolios plotted above the line.

Very poor return performance or very good performance with very low risk may yield negative *T* values. An example of poor performance is a portfolio with both an average rate of return below the risk-free rate and a positive beta. For instance, in the preceding case, assume that a fourth portfolio manager, Z, had a portfolio beta of 0.50 but an average rate of return of only 0.07. The *T* value would be

$$T_Z = \frac{0.07 - 0.08}{0.50} = -0.02$$

Obviously, this performance would plot below the SML

A portfolio with a *negative* beta and an average rate of return above the risk-free rate of return would likewise have a negative *T* value. In this case, however, it indicates exemplary performance.

As an example, assume that Portfolio Manager G invested heavily in gold mining stocks during a period of great political and economic uncertainty. Because gold often has a negative correlation with most stocks, this portfolio's beta could be negative. Assume that our gold portfolio G had a beta of –0.20 and yet experienced an average rate of return of 10 percent. The *T* value for this portfolio would then be

$$T_G = \frac{0.10 - 0.08}{-0.20} = -0.100$$

Although the *T* value is –0.100, if you plotted these results on a graph, it would indicate a position substantially above the SML

Because negative betas can yield *T* values that give confusing results, it is preferable either to plot the portfolio on an SML graph or to compute the expected return for this portfolio using the SML equation and then compare this expected return to the actual return. This comparison will reveal whether the actual return was above or below expectations. In the preceding example for Portfolio G, the expected return would be

$$\begin{aligned} E(R_G) &= RFR + \beta_i(R_M - RFR) \\ &= 0.08 + (-0.20)(0.06) \\ &= 0.08 - 0.012 \\ &= 0.068 \end{aligned}$$

Comparing this expected (required) rate of return of 6.8 percent to the actual return of 10 percent shows that Portfolio Manager G has done a superior job.

***Sharpe's ratio:*** Sharpe likewise conceived of a composite measure to evaluate the performance of mutual funds. The measure followed closely his earlier work on the capital asset pricing model (CAPM), dealing specifically with the capital market line (CML).

The **Sharpe measure** of portfolio performance (designated *S*) is stated as follows:

$$S_i = \frac{\overline{R}_i - \overline{RFR}}{\sigma_i}$$

where:

$\overline{R}_i$ = the average rate of return for portfolio *i* during a specified time period
$\overline{RFR}$ = the average rate of return on risk-free assets during the same time period
$\sigma_i$ = the standard deviation of the rate of return for portfolio *i* during the time period

This measure seeks to measure the *total risk* of the portfolio by including the standard deviation of returns rather than considering only the systematic risk summarized by beta. Because the numerator is the portfolio's risk premium, this measure indicates the *risk premium return earned per unit of total risk.* In terms of capital market theory, this portfolio performance measure uses total risk to compare portfolios to the CML. Finally, notice that in practice the standard deviation can be calculated using either total portfolio returns or portfolio returns in excess of the risk-free rate.

***Demonstration of Comparative Sharpe Measures:*** The following examples use the Sharpe measure of performance. Again, assume that average portfolio return is 0.14 and risk free rate of return is 0.08. Suppose you are told that the standard deviation of the annual rate of return for the market portfolio over the past 10 years was 20 percent ($\sigma_m$ = 0.20). Now you want to examine the performance of the following portfolios:

| Portfolio | Average Annual Rate of Return | Standard Deviation of Return |
|---|---|---|
| D | 0.13 | 0.18 |
| E | 0.17 | 0.22 |
| F | 0.16 | 0.23 |

The Sharpe measures for these portfolios are as follows:

$$S_M = \frac{0.14 - 0.08}{0.20} = 0.300$$
$$S_D = \frac{0.13 - 0.08}{0.18} = 0.278$$
$$S_E = \frac{0.17 - 0.08}{0.22} = 0.409$$
$$S_F = \frac{0.16 - 0.08}{0.23} = 0.348$$

The D portfolio had the lowest risk premium return per unit of total risk, failing even to perform as well as the aggregate market portfolio. In contrast, Portfolios E and F performed better than the aggregate market: Portfolio E did better than Portfolio F.

Given the market portfolio results during this period, it is possible to draw the CML. If we plot the results for Portfolios D, E, and F on this graph, we see that, Portfolio D plots below the line, whereas the E and F portfolios are above the line, indicating superior risk-adjusted performance.

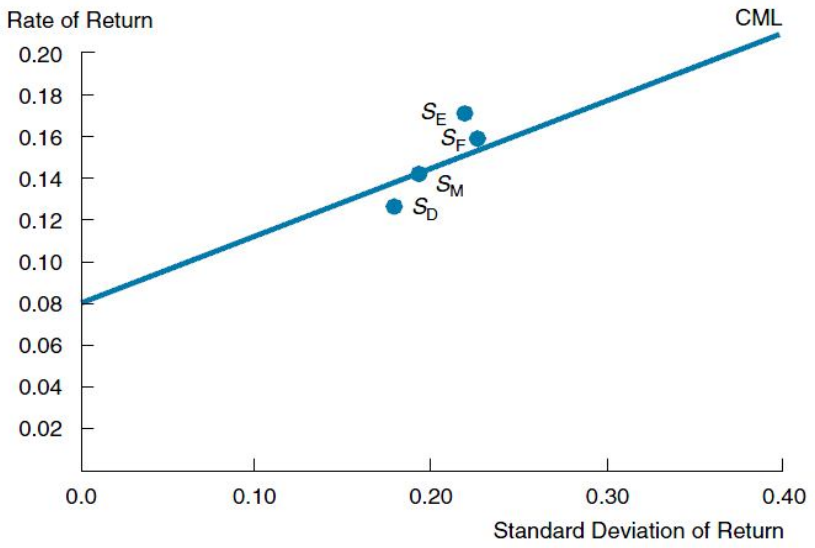


**Figure : 14.2 Plot of Performance on CML (S Measure)**

***Treynor versus Sharpe Measure:***

The Sharpe portfolio performance measure uses the standard deviation of returns as the measure of total risk, whereas the Treynor performance measure uses beta (systematic risk). The Sharpe measure, therefore, evaluates the portfolio manager on the basis of both rate of return performance and diversification.

For a completely diversified portfolio, one without any unsystematic risk, the two measures give identical rankings because the total variance of the completely diversified portfolio is its systematic variance. Alternatively, a poorly diversified portfolio could have a high ranking on the basis of the Treynor performance measure but a much lower ranking on the basis of the Sharpe performance measure. Any difference in rank would come directly from a difference in diversification.

Therefore, these two performance measures provide complementary yet different information, and both measures should be used. If you are dealing with a group of well-

diversified portfolios, as many mutual funds are, the two measures provide similar rankings.

A disadvantage of the Treynor and Sharpe measures is that they produce relative, but not absolute, rankings of portfolio performance. That is, the Sharpe measures for Portfolios E and F, show that both generated risk adjusted returns above the market. Further, E's risk-adjusted performance measure is larger than F's. What we cannot say with certainty, however, is whether any of these differences are statistically significant.

***Jensen's Alpha*** shows excess actual return over required return and excess of actual risk premium over required risk premium. This measure of the portfolio manager's performance is based on the CAPM. The **Jensen measure** is similar to the measures already discussed because it is based on the capital asset pricing model (CAPM). All versions of the CAPM calculate the expected one-period return on any security or portfolio by the following expression:

$$E(R_j) = RFR + \beta_j[E(R_M) - RFR]$$

where:

$E(R_j)$ = the expected return on security or portfolio $j$
$RFR$ = the one-period risk-free interest rate
$\beta_j$ = the systematic risk (beta) for security or portfolio $j$
$E(R_M)$ = the expected return on the market portfolio of risky assets

The basic idea is that to analyze the performance of an investment manager you must look not only at the overall return of a portfolio, but also at the risk of that portfolio. For example, if there are two mutual funds that both have a 12% return, a rational investor will want the fund that is less risky. Jensen's measure is one of the ways to help determine if a portfolio is earning the proper return for its level of risk. If the value is positive, then the portfolio is earning excess returns. In other words, a positive value for Jensen's alpha means a fund manager has "beat the market" with his or her stock picking skills.

***Applying the Jensen Measure:*** The Jensen measure of performance requires using a different risk free rate for each time interval during the sample period. For example, to examine the performance of a fund manager over a 10-year period using yearly intervals, you must examine the fund's annual returns less the return on risk-free assets for each year and relate this to the annual return on the market portfolio less the same risk-free rate. This contrasts with the Treynor and Sharpe composite measures, which examine the *average* returns for the total period for all variables (the portfolio, the market, and the risk-free asset).

Also, like the Treynor measure, the Jensen measure does not directly consider the portfolio manager's ability to diversify because it calculates risk premiums in terms of systematic risk. As noted earlier, to evaluate the performance of a group of well-diversified portfolios such as mutual funds, this is likely to be a reasonable assumption. Jensen's analysis of mutual fund performance showed that complete diversification was a fairly reasonable assumption because the funds typically correlated with the market at rates above 0.90.

It is important to note, that if a portfolio is completely diversified, all of these measures (Sharpe, Treynor's ratios and Jensen's alfa) will agree on the ranking of the portfolios. The reason for this is that with the complete diversification total variance is equal to systematic variance. When portfolios are not completely diversified, the Treynor's and Jensen's measures can rank relatively undiversified portfolios much higher than the Sharpe measure does. Since the Sharpe ratio uses total risk, both systematic and unsystematic components are included.

Jensen in his study of 115 funds found that only 39 funds possessed positive alpha and employing professional management has improved the expected return. On an average, fund's performance is worse than expected without professional management and if any investor is to purchase fund's shares, he must be very selective in his evaluation of management. Thus, Jensen's evaluation of portfolio performance involves two steps:

1. Using the equation expected return should be calculated
2. With the help of beta, $R_m$ and RFR, he has to compare actual return with expected return. If the actual return is greater than expected return, then the portfolio is considered to be functioning in a better manner. The following table gives the portfolio return and market return. Rank the performance.

| Portfolio | Rp | Beta | RFR |
|---|---|---|---|
| A | 15 | 1.2 | 5% |
| B | 12 | 0.8 | 5% |
| C | 15 | 1.5 | 5% |
| Market Index | 12 | 1.0 | 5% |

The return can be calculated with the given information using formula:

$$E(R_j) = RFR + \beta_j[E(R_M) - RFR]$$

Portfolio A= 5+1.2(12-5) = 13.4

Portfolio B= 5+0.8(12-5) = 10.6

Portfolio C= 5+1.5(12-5) = 15.5

The difference between actual and expected return is compared

Portfolio A= 15-13.4= 1.6

Portfolio B= 12-10.6= 1.4

Portfolio C= 15-15.5= -0.5

Among risk adjusted performance to the three portfolios, A is the best, B is second best and the last is portfolio C.

**Factors that affect use of performance measures**

All the performance measures just described are only as good as their data inputs. You must be careful when computing the rates of return to take proper account of all inflows and outflows. More importantly, you should use judgment and be patient in the evaluation process. It is not possible to evaluate a portfolio manager on the basis of a quarter or even a year. Your evaluation should extend over several years and cover at least a full market cycle. This will allow you to determine whether the manager's performance differs during rising and declining markets. Beyond these general cautions, several specific factors should be considered when using these measures.

Most of the equity portfolio performance measures we have discussed are derived from the

CAPM and assume the existence of a market portfolio at the point of tangency on the Markowitz efficient frontier. Theoretically, the market portfolio is an efficient, completely diversified portfolio because it is on the efficient frontier. As discussed earlier, this market portfolio must contain all risky assets in the economy, so that it will be completely diversified, and all components must be market-value weighted. The problem arises in finding a realistic proxy for this theoretical market portfolio. As noted previously, analysts typically use the Standard and Poor's 500 Index as the proxy for the market portfolio because it contains a fairly diversified portfolio of stocks, and the sample is market-value weighted. Unfortunately, it does not represent the true composition of the market portfolio. Specifically, it includes only common stocks and most of them are listed on the NYSE. Notably, it excludes many other risky assets that theoretically should be considered, such as numerous AMEX and OTC stocks, foreign stocks, foreign and domestic bonds, real estate, coins, precious metals, stamps, and antiques.

This lack of completeness was highlighted in several articles by Roll, who detailed the problem with the market proxy and pointed out its implications for measuring portfolio performance. Although a detailed discussion of Roll's critique will not be repeated here,

we need to consider his major problem with the measurement of the market portfolio, which he refers to as a **benchmark error**. He showed that if the proxy for the market portfolio is not a truly efficient portfolio, then the SML using this proxy may not be the true SML—the true SML could have a higher slope. In such a case, a portfolio plotted above the SML and derived using a poor benchmark could actually plot below the SML that uses the true market portfolio. Another problem is that the beta could differ from that computed using the true market portfolio. For example, if the true beta were larger than the beta computed using the proxy, the true position of the portfolio would shift to the right. In an empirical test, Brown and Brown documented a considerable amount of "ranking reversal" when the definition of the market portfolio was changed in a Jensen's alpha analysis of a sample of well-established mutual funds. In efforts to address this problem, Grinblatt and Titman attempted to avoid the conflict altogether by introducing a performance measurement process that did not require benchmarks while Daniel, Grinblatt, Titman, and Wermers developed benchmarks based on the characteristics of the stock held, such as firm size and book-to-market ratios. Terhaar shows how the benchmark error problem can also affect attribution analysis.

## Activity B :

Compare Treynor virus Sharpe Measure

## Activity C :

Explain the Factors which affect use of performance measures

## 14.4 Summary

Portfolio performance evaluation involves determining periodically how the portfolio performed in terms of not only the return earned, but also the risk experienced by the investor. For portfolio evaluation appropriate measures of return and risk as well as relevant standards (or "benchmarks") are needed. In selecting benchmark portfolios investor should be certain that they are relevant, feasible and known in advance. The benchmark should reflect the objectives of the investor. To adjust the return for risk before comparison of performance risk adjusted measures of performance can be used. Sharpe's ratio shows an excess a return over risk free rate, or risk premium, by unit of total risk, measured by standard deviation. Treynor's ratio shows an excess actual return over risk free rate, or risk premium, by unit of systematic risk, measured by Beta. Jensen's Alpha shows excess actual return over required return and excess of actual risk premium over required risk premium. This measure of the portfolio manager's performance is based on the CAPM. The first major goal of portfolio management is to derive rates of return that equal or exceed the returns on a naively selected portfolio with equal risk. The second goal is to attain complete diversification relative to a suitable benchmark. Several techniques have been derived to evaluate equity portfolios in terms

of both risk and return (composite measures). The Treynor measure considers the excess returns earned per unit of systematic risk. The Sharpe measure indicates the excess return per unit of total risk. The Jensen and Information Ratio measures likewise evaluate performance in terms of the systematic risk involved and show how to determine whether the difference in risk-adjusted performance (good or bad) is statistically significant. Additional work in equity portfolio evaluation has been concerned with models that indicate what components of the management process contributed to the results. A model by Fama divided the composite return into measures related to total risk, systematic risk, diversification, and selectivity, in addition to measuring overall performance. Finally, attribution analysis seeks to establish whether market timing or security selection skills (or both) are the source of a manager's performance.In conclusion, investors need to evaluate their own performance and the performance of hired managers. The various techniques we discuss provide theoretically justifiable measures that differ slightly. Although there is high rank correlation among the alternative measures, *all the measures should be used* because they provide different insights regarding the performance of managers. Finally, an evaluation of a portfolio manager should be done many times over different market environments before a final judgment is reached regarding the strengths and weaknesses of a manager.

## 14.5 Self Assessment Questions

1. Briefly describe each of the portfolio performance measures and explain how they are used:

a) Sharpe's ratio;
b) Treynor's ratio;
c) Jensen's Alpha.

2. Describe two major factors that a portfolio manager should consider before designing an investment strategy. What types of decisions can a manager make to achieve these goals?

3. Compare and contrast four prominent approaches to measure investment performance on a risk adjusted basis.

4. The Sharpe and Treynor performance measures both calculate a portfolio's average excess return per unit of risk. Under what circumstances would it make sense to use both measures to compare the performance of a given set of portfolios? What additional information is provided by a comparison of the rankings achieved using the two measures?

5. Describe how the Jensen measure of performance is calculated. Under what conditions should it give a similar set of portfolio rankings as the Sharpe and Treynor measures? Is it possible to adjust the Jensen measure so that a portfolio's alpha value is measured relative to an empirical form of the arbitrage pricing theory rather than the capital asset pricing model? Explain.

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# Unit - 15 Portfolio Revision

## Structure of Units



## 15.0 Objectives

After completion of this unit, you would be able to

- Understand need for Portfolio Revision.
- Discuss and illustrate formula plans for portfolio revision.
- Understand various ways to manage portfolios.
- Understand difference between active and passive management techniques.
- Understand in detail various asset allocation techniques.

## 15.1 Introduction

Most investors are comfortable with buying securities but spend little effort in revising portfolio or selling stocks. In that process they lose opportunities to earn good return. In the entire process of portfolio management, portfolio revision is as important as portfolio analysis and selection. Keeping in mind the risk-return objective, an investor selects a mix of securities from the given investment universe. In a dynamic world of investment, it is only natural that the portfolio may not perform as desired or opportunities might arise turning the desired into less than desired. Further, some of the risk and return estimation might change over a period of time. In every such situation, a portfolio revision is warranted.

## 15.2 Meaning of Portfolio Revision

Portfolio revision involves changing the existing mix of securities. The objective of portfolio revision is similar to the objective of portfolio selection i.e., maximizing the return for a given level of risk or minimising the risk for a given level of return. The process of portfolio revision is also similar to the process of portfolio selection. This is particularly true where active portfolio revision strategy is followed. It calls for reallocation of funds between bond and stock market through economic analysis, reallocation of funds among different industries through industry analysis and finally selling and buying of stocks within the industry through company analysis. Where passive portfolio revision strategy is followed, use of mechanical formula plans may be made.

## 15.3 Need for Portfolio Revision

No plan can be perfect to the extent that it would not need revision sooner or later. Investment Plans are certainly not. In the context of portfolio management the need for revision is even more because the financial markets are continually changing. Thus the need for portfolio revision might simply arise because market witnessed some significant changes since the creation of the portfolio. Further, the need for portfolio revision may arise because of some investor-related factors such as (i) availability of additional wealth, (ii) change in the risk attitude and the utility function of the investor, (iii) change in the investment goals of the investors and (iv) the need to liquidate a part of the portfolio to provide funds for some alternative uses.

The other valid reasons for portfolio revision such as short-term price fluctuations in the market do also exist. There are thus numerous factors, which may be broadly called market related and investor related.

## 15.4 Introduction to Portfolio Revision Strategies

Broadly speaking investors may, depending on their investment objectives skill and resources, follow `active' or `passive' strategies for portfolio revision. Active strategy of portfolio revision involves a process similar to portfolio analysis and selection as described in earlier, which is based on an analysis of fundamental factors covering economy, industries and companies as well as technical factors as. As against this, under passive strategy some kind of formula plans is followed for revision.

Active revision strategy seeks beating the market by anticipating or reacting to the perceived events or information. Passive revision strategy, on the other hand, seeks

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

Investors follow both active and passive portfolio revision strategies. Studies about portfolio revision strategies show that the efficient market hypothesis is slowly but continuously gaining and investors revise their portfolio much less often than they were doing previously because of their rising faith in market efficiency. Institutional investors on the other hand have shown definite tendency in the recent past for active revision of their portfolios and most often to correct their past mistakes. For instance, Morgan Stanley mutual funds in India has made major revision in the last few years to reduce the size of the portfolio since the fund invested initially in about 500 stocks. In a volatile market, many funds feel that without such revision, it would be difficult to show better performance. This is said to be motivated by their desire to achieve superior performance by frequent trading to take advantage of their supposedly superior investment skills.

## 15.5 Constraints in Portfolio Revision

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

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

**Taxes:** In most of the countries, capital gains are taxed at concessional rates. But for any income to qualify as capital gains, it should be earned after lapse of a certain period. To qualify such concessional rate of 10% tax, investors today need to wait for one year after the purchase. The minimum period required to qualify for long-term capital gain is one year for financial assets. Frequent selling for portfolio revision may mean foregoing capital gains tax concession. Higher the tax differential (between rates of tax for income

and capital gains), higher the constraint. Even for tax switches, which means that one stock is sold to establish a tax loss and a comparable security is purchased to replace it in the investor's portfolio, one must wait for a minimum period after selling a stock and before repurchasing it, to be able to declare the gain or loss. If the stock is repurchased before the minimum fixed period, it is considered a wash sale, and no gain or loss can be claimed for tax purpose.

**Statutory Stipulations:** In many countries including India, statutory stipulations have been made as to the percentage of investible funds that can be invested by investment companies/mutual funds in the shares/debentures of a company or industry. In such situation, the initiative to revise portfolio is most likely to get stifled under the burden of various stipulations. Government owned investment companies and mutual funds are quite Portfolio Revision often called upon to support sagging markets (albeit counters) or cool down heated markets, which puts limit on the active portfolio revision by these companies.

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

## 15.6 Portfolio Revision Strategies

### 15.6. 1 Active versus Passive Portfolio Management

There are two types of investment portfolio management:

A. Active portfolio management
B. Passive portfolio management

A) The Main Points For The Passive Portfolio Management:

- Holding securities in the portfolio for the relatively long periods with small and infrequent changes;
- Investors act as if the security markets are relatively efficient. The portfolios they hold may be surrogates for the market portfolio (index funds).
- Passive investors do not try outperforming their designated benchmark.

**The reasons when the investors with passive portfolio management make changes in their portfolios:**

- The investor’s preferences change;
- The risk free rate changes;
- The consensus forecast about the risk and return of the benchmark portfolio changes.

**B) Active Portfolio Management:**

- Active investors believe that from time to time there are mispriced securities or groups of securities in the market;
- The active investors do not act as if they believe that security markets are efficient;
- The active investors use deviant predictions – their forecast of risk and return differ from consensus opinions.

There are arguments for both active and passive investing though it is probably a case that a larger percentage of institutional investors invest passively than do individual investors. of course, the active versus passive investment management decision does not have to be a strictly either/ or choice. One common investment strategy is to invest passively in the markets investor considers to be efficient and actively in the markets investor considers inefficient. Investors also combine the two by investing part of the portfolio passively and another part actively.

### 15.6.2 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 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 funds between aggressive and conservative portfolios.

Normally, the problem of portfolio revision essentially boils down to timing the buying and selling the securities. Ideally, investors should buy when prices are low, and then sell these securities when their prices are high. But as stock prices fluctuate, the natural tendencies of investors often cause them to react in a way opposite to one that would enable them to benefit from these fluctuations. Investors are hesitant to buy when prices are low for fear that prices will fall further lower, or for fear that prices won't move upward again. When prices are high, investors are hesitant to sell because they feel that prices may rise further and they may realise larger profits. It requires skill and discipline to buy when stock prices are low and pessimism abounds and to sell when stock prices are high and optimism prevails. Mechanical portfolio revision techniques have been developed to ease the problem of whether and when to revise to achieve the benefits of buying stocks when prices are low and selling stocks when prices are high. These techniques are referred to as formula plans. Before discussing each one of these, let us understand the basic assumptions and ground rules of formula plans.

**Basic Assumptions and Ground Rules**

The formula plans are based on the following assumptions:

l. The stock prices move up and down in cycles.

2. The stock prices and the high grade bond prices move in the opposite directions.

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

The use of formula plans call for the investor to divide his investment funds into two portfolios, one aggressive and the other conservative or defensive. The aggressive portfolio usually consists of stocks while conservative portfolio consists of bonds.

The formula plans specify pre-designated rules for the transfer of funds from the aggressive into the conservative and vice-versa such that it automatically causes the investor to sell stocks when their prices are rising and buy stocks when their prices are falling. Let us now discuss, one by one, the formula plans.

**Constant-Rupee-Value Plan**

The Plan (CRVP) asserts that the Rupee value of the stock portion of the portfolio will remain constant. This, in operational terms, would mean that as the value of the stocks rises, the investor must automatically sell some of the shares to keep the value of his aggressive portfolio constant. If, on the other hand, the prices of the stocks fall, the investor must buy additional stocks to keep the value of the aggressive portfolio constant. By specifying that the aggressive portfolio will remain constant in rupee value, the plan implies that the remainder of the total fund will be invested in the conservative fund. In order to implement this plan, an important question to answer is what will be the action points? Or, in other words, when will the investor make the transfer called for to keep the rupee value of the aggressive portfolio constant? Will it be made with every change in the prices of the stocks comprising the aggressive portfolio? Or, will it be set according to pre-specified periods of time or percentage change in some economic or market index or percentage change in the value of the aggressive portfolio?

**Constant-Ratio-Plan**

The constant-ratio plan specifies that the value of the aggressive portfolio to the value of the conservative portfolio will be held constant at the pre-determined ratio. This plan automatically forces the investor to sell stocks as their prices rise, in order to keep the ratio of the value of their aggressive portfolio to the value of the conservative portfolio constant.

**Variable-Ratio Plan**

Variable-ratio plan is a more flexible variation of constant ratio plan. Under the variable ratio plan, it is provided that if the value of aggressive portfolio changes by certain percentage or more, the initial ratio between the aggressive portfolio and conservative portfolio will be allowed to change as per the pre-determined schedule. Some variations of this plan provide for the ratios to vary according to economic or market indices rather than the value of the aggressive portfolio. Still others use moving averages of indicators.

### 15.6.3 Rupee Cost Averaging

In the formula plans discussed above, investors have to create two portfolios and switch the investment from one to another depending on the market condition. An alternative to this approach is investing only in stocks and building a portfolio over a period of time while reducing the cost of acquisition. Often investors get into the problem of bad investment by betting the entire wealth on stocks. Such mistakes can be avoided by investing regularly over a period of time and thus getting an average price of the market. Since stocks have always the tendency of moving upward and downward, it would be difficult to exactly buy at low and sell at top. These averaging methods allow the investors to participate in both bull and bear markets.

**Rupee Cost Averaging**

Under this method, an investor will invest a constant amount every period (say monthly) in single or group of stocks or invest in index funds. In that process, if the stock price is low, the investor would be in a position to buy more stocks (or more units in the case of mutual funds investments) and if the prices are high, then the investor will purchase less number of stocks or units. Since the amount invested is same irrespective of the market conditions, this technique is referred to as Rupee cost averaging. Over a period of time (after couple of bull and bear markets), you can expect the average cost of holding per share will be considerably less than the current market price. But yes one has to wait for a minimum period to see the impact of such plans.

## Activity A :

1 What are the reasons which cause investors managing their portfolios passively to make changes their portfolios?

## 15.7 Strategic Versus Tactical Asset Allocation

An asset allocation focuses on determining the mixture of asset classes that is most likely to provide a combination of risk and expected return that is optimal for the investor. Asset allocation is a bit different from diversification. It focus is on investment in various asset classes. Diversification, in contrast, tends to focus more on security selection – selecting the specific securities to be held within an asset class.

Asset classes here is understood as groups of securities with similar characteristics and properties (for example, common stocks; bonds; derivatives, etc.). Asset allocation proceeds other approaches to investment portfolio management, such as market timing (buy low, sell high) or selecting the individual securities which are expected will be the "winners". These activities may be integrated in the asset allocation process. But the main focus of asset allocation is to find such a combination of the different asset classes in the investment portfolio which the best matches with the investor's goals – expected return on investment and investment risk. Asset allocation largely determines an investor's success or lack thereof. In fact, studies have shown that as much as 90 % or more of a portfolio's return comes from asset allocation. Furthermore, researchers have found that asset allocation has a much greater impact on reducing total risk than does selecting the best investment vehicle in any single asset category.

Two categories in asset allocation are defined:

- Strategic asset allocation;
- Tactical asset allocation.

Strategic asset allocation identifies asset classes and the proportions for those asset classes that would comprise the normal asset allocation. Strategic asset allocation is used to derive long) term asset allocation weights. The fixed weightings approach in strategic asset allocation is used. Investor using this approach allocates a fixed percentage of the portfolio to each of the asset classes, of which typically are three to five. Example of asset allocation in the portfolio might be as follows:

| **Asset Class** | **Allocation** |
|---|---|
| Common Stoc k | 40% |
| Bonds | 50% |
| **Short-Term Securities** | **10%** |
| **Total Portfolio** | **100%** |

Generally, these weights are not changed over time. When market values change, the investor may have to adjust the portfolio annually or after major market moves to maintain the desired fixed) percentage allocation.

**Tactical asset allocation** produces temporary asset allocation weights that occur in response to temporary changes in capital market conditions. The investor's goals and risk- return preferences are assumed to remain unchanged as the asset weights are occasionally revised to help attain the investor's constant goals. For example, if the investor believes some sector of the market is over) or under valuated. The passive asset allocation will not have any changes in weights of asset classes in the investor's portfolio – the weights identified by strategic asset allocation are used.

Alternative asset allocations are often related with the different approaches to risk and return, identifying conservative, moderate and aggressive asset allocation.

The conservative allocation is focused on providing low return with low risk; the moderate – average return with average risk and the aggressive – high return and high risk. The example of these alternative asset allocations is presented in

**Table 15.1**

**Comparison between the alternative asset allocations**

| Asset class | Alternative asset allocation | | |
|---|---|---|---|
| | Conservative | Moderate | Aggressive |
| Common stock | 20% | 35% | 65% |
| Bonds | 45% | 40% | 20% |
| Short-term securities | 35% | 15% | 5% |
| Total portfolio | 100% | 100% | 100% |

For asset allocation decisions Markowitz portfolio model as a selection techniques can be used. Although Markowitz model was developed for selecting portfolios of individual securities, but thinking in terms of asset classes, this model can be applied successfully to find the optimal allocation of assets in the portfolio. Programs exist to calculate efficient frontiers using asset classes and Markowitz model is frequently used for the asset allocation in institutional investors' portfolios.

The correlation between asset classes is obviously a key factor in building an optimal portfolio. Investors are looking to have in their portfolios asset classes that are negatively correlated with each other, or at least not highly positively correlated with each other. It is obvious that correlation coefficients between asset classes returns change over time. It is also important to note that the historical correlation between different asset classes will vary depending on the time period chosen, the frequency of the data and the asset class, used to estimate the correlation.

## 15.8 Monitoring and Revision of the Portfolio

**The main reasons for the necessity of the investment portfolio revision:**

- As the economy evolves, certain industries and companies become either less or more attractive as investments;
- The investor over the time may change his/her investment objectives and in this way his/ her portfolio isn't longer optimal;
- The constant need for diversification of the portfolio. Individual securities in the portfolio often change in risk-return characteristics and their diversification effect may be lessened.

Three areas to monitor when implementing investor's portfolio monitoring:

1. Changes in market conditions;

2. Changes in investor's circumstances;

3. Asset mix in the portfolio.

The need to monitor changes in the market is obvious. Investment decisions are made in dynamic investment environment, where changes occur permanently. The key macroeconomic indicators (such as GDP growth, inflation rate, interest rates, others), as well as the new information about industries and companies should be observed by investor on the regular basis, because these changes can influence the returns and risk of the investments in the portfolio. Investor can monitor these changes using various sources of information, especially specialized websites (most frequently used are presented in relevant websites). It is important to identify he major changes in the investment environment and to assess whether these changes should negatively influence investor's currently held portfolio. If it so investor must take an actions to rebalance his/ her portfolio.

When monitoring the changes in the investor's circumstances, following aspects must be taken into account:

- Change in wealth
- Change in time horizon
- Change in liquidity requirements
- Change in tax circumstances
- Change in legal considerations
- Change in other circumstances and investor's needs.

Any changes identified must be assessed very carefully before usually they generally are related with the noticeable changes in investor's portfolio.

Rebalancing a portfolio is the process of periodically adjusting it to maintain certain original conditions. Rebalancing reduces the risks of losses – in general, a rebalanced portfolio is less volatile than one that is not rebalanced. Several methods of rebalancing portfolios are used:

- Constant proportion portfolio;
- Constant Beta portfolio;
- Indexing.

**Constant proportion portfolio**

A constant proportion portfolio is one in which adjustments are made so as to maintain the relative weighting of the portfolio components as their prices change. Investors should concentrate on keeping their chosen asset allocation percentage (especially those following the requirements for strategic asset allocation). There is no one correct formula for when to rebalance. One rule may be to rebalance portfolio when asset allocations vary by 10% or more. But many investors find it bizarre that constant proportion rebalancing requires the purchase of securities that have performed poorly and the sale of those that have performed the best. But the investor should always consider this method of rebalancing as one choice, but not necessarily the best one.

**Constant Beta portfolio**

The base for the rebalancing portfolio using this alternative is the target portfolio Beta. Over time the values of the portfolio components and their Betas will change and this can cause the portfolio Beta to shift. For example, if the target portfolio Beta is 1.10 and it had risen over the monitored period of time to 1.25, the portfolio Beta could be brought back to the target 1.10 in the following ways:

- **Put additional money into the stock portfolio and hold cash**
  Diluting the stocks in portfolio with the cash will reduce portfolio Beta, because cash has Beta of 0. But in this case cash should be only a temporary component in the portfolio rather than a long) term;
- **Put additional money into the stock portfolio and buy stocks with a Beta lower than the target Beta figure**
  But the investor may be is not able to invest additional money and this way for rebalancing the portfolio can be complicated.
- **Sell high Beta stocks in portfolio and hold cash**
  As with the first alternative, this way reduces the equity holdings in the investor's portfolio which may be not appropriate.
- **Sell high Beta stocks and buy low Beta stocks**
  The stocks bought could be new additions to the portfolio, or the investor could add to existing positions.

### Indexing

This alternatives for rebalancing the portfolio are more frequently used by institutional investors (often mutual funds), because their portfolios tend to be large and the strategy of matching a market index are best applicable for them. Managing index based portfolio investor (or portfolio manager) eliminates concern about outperforming the market, because by design, it seeks to behave just like the market averages. Investor attempts to maintain some predetermined characteristics of the portfolio, such as Beta of 1.0. The extent to which such a portfolio deviates from its intended behaviours called tracking error.

Revising a portfolio is not without costs for an individual investor. These costs can be direct costs – trading fees and commissions for the brokers who can trade securities on the exchange. With the developing of alternative trading systems (ATS) these costs can be decreased. It is important also, that the selling the securities may have income tax implications which differ from country to country.

### Activity B :

1. Explain the role of revision in the process of managing a portfolio.

## 15.9 Summary

This Unit discusses and illustrates meaning formula plans of portfolio revision, namely, constant-dollar-value plan, constant-ratio plan, variable-ratio plan and rupee cost averaging. These formula plans have their own limitations. The choice of portfolio revision strategy or plan is thus no simple question. The choice will involve cost and benefit analysis. Strategic asset allocation identifies asset classes and the proportions for those asset classes that would comprise the normal asset allocation. Strategic asset allocation is used to derive long term asset allocation weights. The fixed-weightings approach in strategic asset allocation is used. Tactical asset allocation produces temporary asset allocation weights that occur in response to temporary changes in capital market conditions. The investor's goals and risk) return preferences are assumed to remain unchanged as the asset weights are occasionally revised to help attain the investor's constant goals. Rebalancing a portfolio is the process of periodically adjusting it to maintain certain original conditions. Rebalancing reduces the risks of losses – in general, a rebalanced portfolio is less volatile than one that is not rebalanced.A constant proportion portfolio is one of the portfolio rebalancing methods in which adjustments are made so as to maintain the relative weighting of the portfolio components as their prices change. Investors should concentrate on keeping their chosen asset allocation percentage.

## 15.10 Self Assessment Questions

1. What are the major differences between active and passive portfolio management?
2. Distinguish strategic and tactical asset allocation
3. Why is the asset allocation decision the most important decision made by investors?
4. What is the point of investment portfolio rebalancing?
5. What changes in investor's circumstances cause the rebalancing of the investment portfolio? Explain why.
6. Why is portfolio revision not free of cost?
7. Why benchmark portfolios are important in investment portfolio management?

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# Unit - 16 Investment Companies

## Structure of Unit



## 16.0 Objectives

After completion of this unit, you would be able to :

- Understand the concept and framework of Investment Companies
- Study the Major types of Investment Companies
- Examine critically the rationale behind incorporating Investment Companies.
- Know the legal framework or the regularity authorities governing critically the rationale behind incorporating Investment Companies.
- Learn about the growth of mutual fund in India and the recent trends.
- Understand the role of AMFI

## 16.1 Introduction

By an investment company, we generally mean a company, which is responsible for issuing securities as well as is primarily involved in the investment business. They normally invest the money received from their investors and every investor shares the profit or the losses that is proportionate to the interest of the investor in that company. The performances of such companies are mostly based on the performance of the different kinds of assets and the securities, which they own.

## 16.2 Concept of Investment Company

An investment company is a company whose main business is holding securities of other companies purely for investment purposes. The investment company invests money on behalf of its shareholders who in turn share in the profits and losses. Generally, an investment company is a company (corporation, business trust, partnership, or Limited Liability Company) that issues securities and is primarily engaged in the business of investing in securities.

An investment company invests the money it receives from investors on a collective basis, and each investor shares in the profits and losses in proportion to the investor's interest in the investment company. The performance of the investment company will be based on the performance of the securities and other assets that the investment.

Investment companies are business entities, both privately and publicly owned, who invest in large blocks of securities of diverse firms, and
to obtain its capital from issues of
shares or units. Investment companies giveasmall investor the advantage of a full time professional investment management, and a very much wider spread of risk that it would have been other- wise possible.

## 16.3 Advantages of Investment Companies

For an individual there are two type of advantages to investing in such companies instead of investing directly in the financial assets. Specifically the advantages arise from:

1) Economies of Scale
2) Professional Management

**Economies of Scale**: In terms of economies of scale, the individual could buy stocks in odd lots and thus have a diversified portfolio. However, the brokerage commissions on odd lot transactions are relatively high. Alternatively, the individual could purchase

round lots, but would only be able to afford a few different securities. Unfortunately the individual would then be giving up the benefits of owing a well diversified portfolio. In order to receive the benefit of both diversification and substantially reduced brokerage commissions, the individual could invest in the shares of an investment company. This is because economies of scale make it possible for an investment company to provide diversification at a lower cost of investment than would be incurred by a small investor.

**Professional Management**: In terms of professional management, the individual investing directly in the stock market would have to go through all the details of investing, including making all buying and selling decisions as well as keeping records of all transactions for tax purposes. In doing so, the individual would have to be continually on the lookout for mispriced securities in an attempt to find undervalued ones for the purchase, while selling any that were found to be overvalued. Simultaneously the individual would have to keep track of the overall risk level of the portfolio so that it did not deviate from some desired level. However, by purchasing shares of an investment company, the individual can turn over all these details to a professional money manager.

## 16.4 Major Types of Investment Companies

They are divided into three major types:

(1) **Open-End Funds: It is** also called mutual funds which have a floating number of issued shares, and sell or redeem their shares at their current net asset value (NAV);

(2**) Closed-End Funds:** Also called investment trusts. They can sell only a fixed number of shares which are traded on stock exchanges, usually at a discount to their net asset value; and

(3**) Unit Investment Trusts:** Also called unit trusts. They sell their redeemable securities called units which represent interests in the securities held by the trust in its investment portfolio. A unit holder is not a shareholder in a unit trust.

Each type of investment companies has its own unique features. For example, mutual fund and UIT shares are "redeemable" meaning that when investors want to sell their shares, they sell them back to the fund or trust, or to a broker acting for the fund or trust, at their approximate net asset value. Closed-end fund shares, on the other hand, generally are not redeemable. Instead, when closed-end fund investors want to sell their shares, they generally sell them to other investors on the secondary market, at a price determined by the market. In addition, there are variations within each type of investment company, such as stock funds, bond funds, money market funds, index funds, interval funds, and Exchange Traded Funds (ETFs)

## 16.5 Open-End investment Company

An Open-End investment company distributes and redeems securities it issues. The most common open-end management companies are mutual fund companies which sell and redeem shares at the net asset value per share. An investor in an open-end fund essentially pools his/her money with other investors in order to attain economies of scale, professional management, etc. This differs from a closed-end fund which has a limited number of shares available. Unlike with open-end funds, an investor in a closed-end fund typically sells his/her shares on the open market to another investor instead of back to the fund company.

**Concept of Mutual Fund**

A mutual fund is a managed group of owned securities of several corporations. These corporations receive dividends on the shares that they hold and realize capital gains or losses on their securities traded. Investors purchase shares in the mutual as if it was an individual security. After paying operating costs, the earnings (dividends, capital gains or loses ) of the mutual fund are distributed to the investors, in proportion to the amount of money invested. Investors hope that a loss on one holding will be made up by a gain on another.

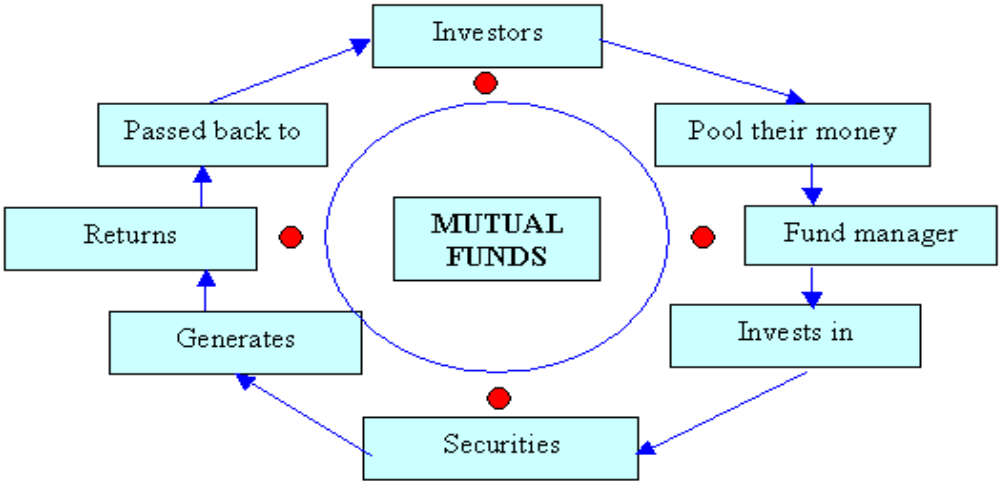


**Figure 16.1 Concept of Mutual Funds**

A mutual fund may be either an open-end or a closed-end fund. An open-end mutual fund does not have a set number of shares; it may be considered as a fluid capital stock. The number of shares changes as investors buys or sell their shares. Investors are able to buy and sell their shares of the company at any time for a market price. However the

open-end market price is influenced greatly by the fund managers. On the other hand, closed-end mutual fund has a fixed number of shares and the value of the shares fluctuates with the market. But with close-end funds, the fund manager has less influence because the price of the underlining owned securities has greater influence.

**Advantages of Mutual Funds**

**Professional Management** - The primary advantage of funds is the professional management of your money. Investors purchase funds because they do not have the time or the expertise to manage their own portfolios. A mutual fund is a relatively inexpensive way for a small investor to get a full-time manager to make and monitor investments.

**Diversification -** By owning shares in a mutual fund instead of owning individual stocks or bonds, your risk is spread out. 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. Large mutual funds typically own hundreds of different stocks in many different industries. It wouldn't be possible for an investor to build this kind of a portfolio with a small amount of money.

**Economies of Scale** - Because a mutual fund buys and sells large amounts of securities at a time, its transaction costs are lower than what an individual would pay for securities transactions.

Liquidity - Just like an individual stock, a mutual fund allows you to request that your shares be converted into cash at any time.

Simplicity - Buying a mutual fund is easy! Pretty well any bank has its own line of mutual funds, and the minimum investment is small. Most companies also have automatic purchase plans whereby as little as $100 can be invested on a monthly basis.

**Disadvantages of Mutual Funds**

- Costs - Creating, distributing, and running a mutual fund is an expensive proposition. Those expenses are passed on to the investors. Since fees vary widely from fund to fund, failing to pay attention to the fees can have negative long-term consequences. Remember, every dollar spend on fees is a dollar that has no opportunity to grow over time.
- Dilution - It's possible to have too much diversification. Because funds have small holdings in so many 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.
- Taxes - When a fund manager sells a security, a capital-gains tax is triggered. Investors who are concerned about the impact of taxes need to keep those concerns in mind when investing in mutual funds. Taxes can be mitigated by investing in tax-sensitive funds or by holding non-tax sensitive mutual fund in a tax-deferred account.

**Kinds of Mutual Funds**

The mutual fund industry of India is continuously evolving. Along the way, several industry bodies are also investing towards investor education. Yet, according to a report by Boston Analytics, less than 10% of our households consider mutual funds as an investment avenue. It is still considered as a high-risk option.

In fact, a basic inquiry about the types of mutual funds reveals that these are perhaps one of the most flexible, comprehensive and hassle free modes of investments that can accommodate various types of investor needs. Various types of mutual funds categories are designed to allow investors to choose a scheme based on the risk they are willing to take, the investable amount, their goals, the investment term, etc.

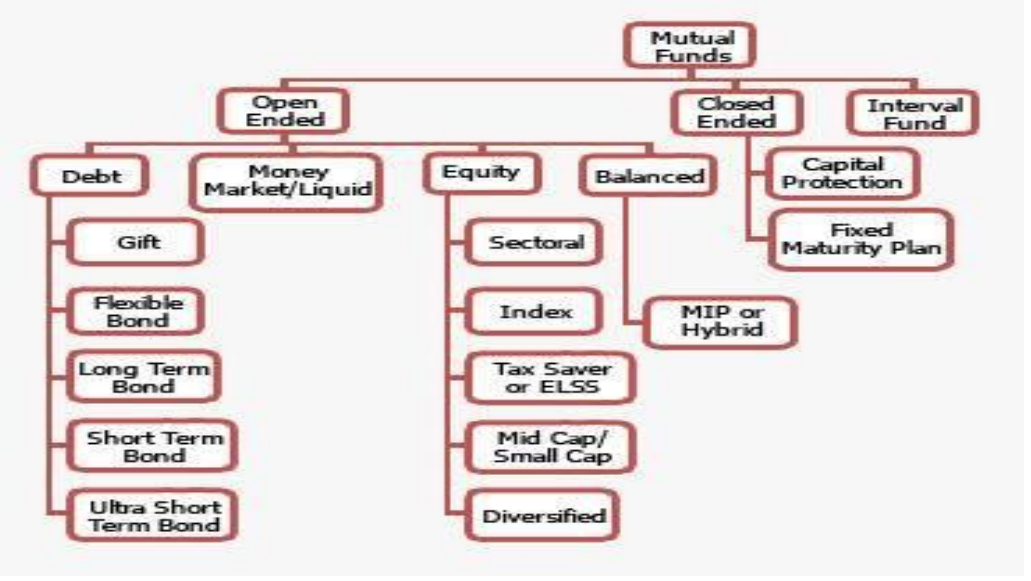


**Figure 16.2 Kinds of Mutual Funds**

**Let us have a look at some important mutual fund schemes under the following three categories based on maturity period of investment:**

**I. Open-Ended -** This scheme allows investors to buy or sell units at any point in time. This does not have a fixed maturity date.

**1. Debt/ Income -** In a debt/income scheme, a major part of the investable fund are channelized towards debentures, government securities, and other debt instruments. Although capital appreciation is low (compared to the equity mutual funds), this is a relatively low risk-low return investment avenue which is ideal for investors seeing a steady income.

**2. Money Market/ Liquid -** This is ideal for investors looking to utilize their surplus funds in short term instruments while awaiting better options. These schemes invest in short-term debt instruments and seek to provide reasonable returns for the investors.

**3. Equity/ Growth -** Equities are a popular mutual fund category amongst retail investors. Although it could be a high-risk investment in the short term, investors can expect capital appreciation in the long run. If you are at your prime earning stage and looking for long-term benefits, growth schemes could be an ideal investment.

a) **Index Scheme -** Index schemes is a widely popular concept in the west. These follow a passive investment strategy where your investments replicate the movements of benchmark indices like Nifty, Sensex, etc.

b) **Sectoral Scheme -** Sectoral funds are invested in a specific sector like infrastructure, IT, pharmaceuticals, etc. or segments of the capital market like large caps, mid caps, etc. This scheme provides a relatively high risk-high return opportunity within the equity space.

c) **Tax Saving -** As the name suggests, this scheme offers tax benefits to its investors. The funds are invested in equities thereby offering long-term growth opportunities. Tax saving mutual funds (called Equity Linked Savings Schemes) has a 3-year lock-in period.

**4. Balanced -** This scheme allows investors to enjoy growth and income at regular intervals. Funds are invested in both equities and fixed income securities; the proportion is pre-determined and disclosed in the scheme related offer document. These are ideal for the cautiously aggressive investors.

**II. Closed-Ended -** In India, this type of scheme has a stipulated maturity period and investors can invest only during the initial launch period known as the NFO (New Fund Offer) period.

1. **Capital Protection -** The primary objective of this scheme is to safeguard the principal amount while trying to deliver reasonable returns. These invest in high-quality fixed income securities with marginal exposure to equities and mature along with the maturity period of the scheme.

2. **Fixed Maturity Plans (FMPs) -** FMPs, as the name suggests, are mutual fund schemes with a defined maturity period. These schemes normally comprise of debt instruments which mature in line with the maturity of the scheme, thereby earning through the interest component (also called coupons) of the securities in the portfolio. FMPs are normally passively managed, i.e. there is no active trading of debt instruments in the portfolio. The expenses which are charged to the scheme, are hence, generally lower than actively managed schemes.

**III. Interval -** Operating as a combination of open and closed ended schemes, it allows investors to trade units at pre-defined intervals

## 16.6 Net Asset Value - NAV

Net asset value (NAV) represents a fund's per share market value. This is the price at which investors buy ("bid price") fund shares from a fund company and sell them ("redemption price") to a fund company. It is derived by dividing the total value of all the cash and securities in a fund's portfolio, less any liabilities, by the number of shares outstanding. An NAV computation is undertaken once at the end of each trading day based on the closing market prices of the portfolio's securities.

For example, if a fund has assets of $50 million and liabilities of $10 million, it would have a NAV of $40 million. This number is important to investors, because it is from NAV that the price per unit of a fund is calculated. By dividing the NAV of a fund by the number of outstanding units, you are left with the price per unit. In our example, if the fund had 4 million shares outstanding, the price-per-share value would be $40 million divided by 4 million, which equals $10.

This pricing system for the trading of shares in a mutual fund differs significantly from that of common stock issued by a company listed on a stock exchange. In this instance, a company issues a finite number of shares through an initial public offering (IPO), and possibly subsequent additional offerings, which then trade in the secondary market. In this market, stock prices are set by market forces of supply and demand. The pricing system for stocks is based solely on market sentiment.

In the context of mutual funds, NAV per share is computed once a day based on the closing market prices of the securities in the fund's portfolio. All mutual funds' buy and sell orders are processed at the NAV of the trade date. However, investors must wait until the following day to get the trade price. Mutual funds pay out virtually all of their income and capital gains. As a result, changes in NAV are not the best gauge of mutual fund performance, which is best measured by annual total return. Because ETFs and closed-end funds trade like stocks, their shares trade at market value, which can be a dollar value above (trading at a premium) or below (trading at a discount) NAV.

## 16.7 Role of AMFI (Association Mutual Fund in India)

**The Association of Mutual Funds in India** (AMFI) is dedicated to developing the Indian Mutual Fund Industry on professional, healthy and ethical lines and to enhance and maintain standards in all areas with a view to protecting and promoting the interests of mutual funds and their unit holders.

## 16.8 SEBI Guideline of Mutual Fund : SEBI Regulation Act 1996

**Establishment of a Mutual Fund :**

In India mutual fund play the role as investment with trust, some of the formalities laid down by the SEBI to be establishment for setting up a mutual fund. As the part of trustee sponsor the mutual fund, under the Indian Trust Act, 1882, under the trustee company are represented by a board of directors. Board of Directors is appoints the AMC and custodians. The board of trustees made relevant agreement with AMC and custodian. The launch of each scheme involves inviting the public to invest in it, through an offer documents. Depending on the particular objective of scheme, it may open for further sale and repurchase of units, again in accordance with the particular of the scheme, the scheme may be wound up after the particular time period.

1. The sponsor has to register the mutual fund with SEBI
2. To be eligible to be a sponsor, the body corporate should have a sound track record and a general reputation of fairness and integrity in all his business transactions.

   **Means of Sound Track Records**

   The body corporate being in the financial services business for at least five years Having a positive net worth in the five years immediately preceding the application of registration.

   Net worth in the immediately preceding year more than its contribution to the capital of the AMC.

   Earning a profit in the three out of the five preceding years, including the fifth year.
3. The sponsor should hold at least 40% of the net worth of the AMC.
4. A party which is not eligible to be a sponsor shall not hold 40% or more of the net worth of the AMC.
5. The sponsor has to appoint the trustees, the AMC and the custodian.
6. The trust deed and the appointment of the trustees have to be approved by SEBI.
7. An AMC or its officers or employees cannot be appointed as trustees of the mutual fund
8. At least two thirds of the business should be independent of the s p o n s o r .
9. Only an independent trustee can be appointed as a trustee of more than one mutual fund, such appointment can be made only with the prior approval of the fund of which the person is already acting as a trustees.

## 16.9 Launching of a Schemes

Before its launch, a scheme has to be approved by the trustees and a copy of its offer documents filed with the SEBI.

1. Every application form for units of a scheme is to be accompanies by a memorandum containing key information about the scheme.
2. The offer document needs to contain adequate information to enable the investors to make informed investments decisions.
3. All advertisements for a scheme have to be submitted to SEBI within seven days from the issue date.
4. The advertisements for a scheme have to disclose its investment objective.
5. The offer documents and advertisements should not contain any misleading information or any incorrect statement or opinion.
6. The initial offering period for any mutual fund schemes should not exceed 45 days, the only exception being the equity linked saving schemes.
7. No advertisements can contain information whose accuracy is dependent on assumption.
8. An advertisement cannot carry a comparison between two schemes unless the schemes are comparable and all the relevant information about the schemes is given.
9. All advertisements need to carry the name of the sponsor, the trustees, the AMC of the fund.
10. All advertisements need to disclose the risk factors.
11. All advertisements shall clarify that investment in mutual funds is subject to market risk and the achievement of the fund's objectives cannot be assured.
12. When a scheme is open for subscription, no advertisement can be issued stating that the scheme has been subscribed or over subscription.

## 16.10 Recent Trend of Mutual Fund

India is at the first stage of a revolution that has already peaked in the U.S. The U.S. boasts of an Asset base that is much higher than its bank deposits. In India, mutual fund assets are not even 10% of the bank deposits, but this trend is beginning to change. Recent figures indicate that in the first quarter of the current fiscal year mutual fund assets went up by 115% whereas bank deposits rose by only 17%. (Source: Thinktank, the Financial Express September, 99) This is forcing a large number of banks to adopt the concept of narrow banking wherein the deposits are kept in Gilts and some other assets which improves liquidity and reduces risk. The basic fact lies that banks cannot be ignored and they will not close down completely. Their role as intermediaries

cannot be ignored. It is just that Mutual Funds are going to change the way banks do business in the future.

A **closed-end fund (CEF)** is a publicly traded security that offers its shareholders partial ownership in an underlying portfolio of assets.

*Closed-end funds* initially raise capital through an initial public offering. They then use the proceeds to invest in a basket of securities. The term "closed-end" refers to the fact that once the initial shares are issued, the fund is basically "closed" to new investors wishing to purchase shares from the company. Instead, buying and selling takes place between individual investors.

Investment companies are classified as either closed-end or open-end, depending on the fund's redemption feature. Closed-end funds do not redeem investors' shares -- shares are bought and sold at market prices on an exchange. Open-end funds, also known as mutual funds, directly buy and sell investor shares at net asset value (NAV). NAV is simply the fund assets minus fund liabilities.

Similar to common stocks, closed-end funds usually trade on one of the major U.S. exchanges. However, unlike regular stocks, they represent a share of a specialized portfolio managed by a group of investment advisors. These managers typically concentrate on a specific industry, country, or sector. Management strategies are explained in a closed-end fund's prospectus, which should be reviewed thoroughly before investing.

Closed-end funds typically invest in more speculative investments than open-end mutual funds, and they sometimes invest in illiquid assets or alternative asset classes. For example, Closed Fund XYZ may specialize in buying and selling mortgage backed securities (MBS). MBS are generally not available to individuals, so if you want exposure to them, you can buy shares of Closed Fund XYZ.

One important aspect of closed-end funds is that their share price can deviate substantially from their NAV. If the shares are trading at a higher price than the fund's NAV, they are said to be trading at a premium. Conversely, a fund with share price lower than its NAV is said to be trading at a discount. Closed-end funds that trade at substantial discounts to their NAV may offer compelling opportunities for investors to pick up good assets on the cheap.

Closed-end funds can be an easy way for an individual to invest in a piece of a diversified portfolio. Like open-end funds, these securities allow individual investors an opportunity to invest in a wide range of assets, industries, countries, etc. They also allow the individual investor a chance to invest in highly specialized and sometimes speculative instruments that would otherwise be off-limits or unavaible.

Before purchasing, it is important to understand any sales fees and management expenses, which are listed and explained in the fund's prospectus. Fees vary from fund to fund and can eat away at your total return

- Closed-end investment company’s do not continuously offer shares to the public. Capital is raised by rights offerings, to existing shareholders.

- Closed-end companies can influence the net asset value, but this is not of great concern to investors.
- Closed-end companies are permitted to invest in unlisted securities, which may not have a liquid market.
- Closed-end companies are not required to buy its shares back from investors upon request.
- Portfolios of closed-end companies are managed by separate investment advisers, who do not benefit from the continuous buying and selling of the funds assets, like mutual funds.
- Investors should carefully read all of a fund's available information, including its prospectus, and most recent shareholder report, before putting assets into a closed-end fund

## 16.11 Unit Investment Trusts (UITs)

Unit investment trusts (UITs) are registered investment companies with some characteristics of mutual funds and some of closed-end funds. Like closed-end funds, however, UITs typically issue only a specific, fixed number of shares. A UIT typically issues redeemable securities or units like a mutual fund, which means that the UIT will buy back an investor's units at the investor's request, at their approximate net asset value (or NAV) . Some exchange-traded funds (ETFs) are structured as UITs.

- A UIT typically will make a one-time public offering of only a specific, fixed number of units like closed-end funds. Many UIT sponsors, however, will maintain a secondary market, which allows owners of UIT units to sell them back to the sponsors and allows other investors to buy UIT units from the sponsors.
- A UIT will have a termination date (a date when the UIT will terminate and dissolve) that is established when the UIT is created (although some may terminate more than fifty years after they are created). In the case of a UIT investing in bonds, for example, the termination date may be determined by the maturity date of the bond investments. When a UIT terminates, any remaining investment portfolio securities are sold and the proceeds are paid to the investors.
- A UIT does not actively trade its investment portfolio. That is, a UIT buys a relatively fixed portfolio of securities (for example, five, ten, or twenty specific stocks or bonds), and holds them with little or no change for the life of the UIT. Because the investment portfolio of a UIT generally is fixed, investors know more or less what they are investing in for the duration of their investment. Investors will find the portfolio securities held by the UIT listed in its prospectus.

  A UIT does not have a board of directors, corporate officers, or an investment adviser to render advice during the life of the trust.

## 16.12 Summary

In India, the investment companies are of the management type and are formed under the companies act. Like joint-stock companies engaged in commercial or industrial business, investment companies raise their capital by issuing shares and debentures to the public. The profits of such companies comprise the dividends and interest received on the various securities purchased out of the raised capital. Like other companies, they create reserves and distribute dividends out o the current profit

## 16.13 Self Assessment Questions

1. Define Investment Companies.
2. Discuss the growth of Investment Companies in India
3. Differentiate between open ended and close ended funds.
4. Critically examining the rationale behind incorporating Investment Companies.
5. Discuss the role of Mutual fund Industry in India
6 Write a short notes on Unit Investment Trusts (UITS)

## 16.14 Reference Books


- The Indian Financial System, Bharati V.Pathak
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